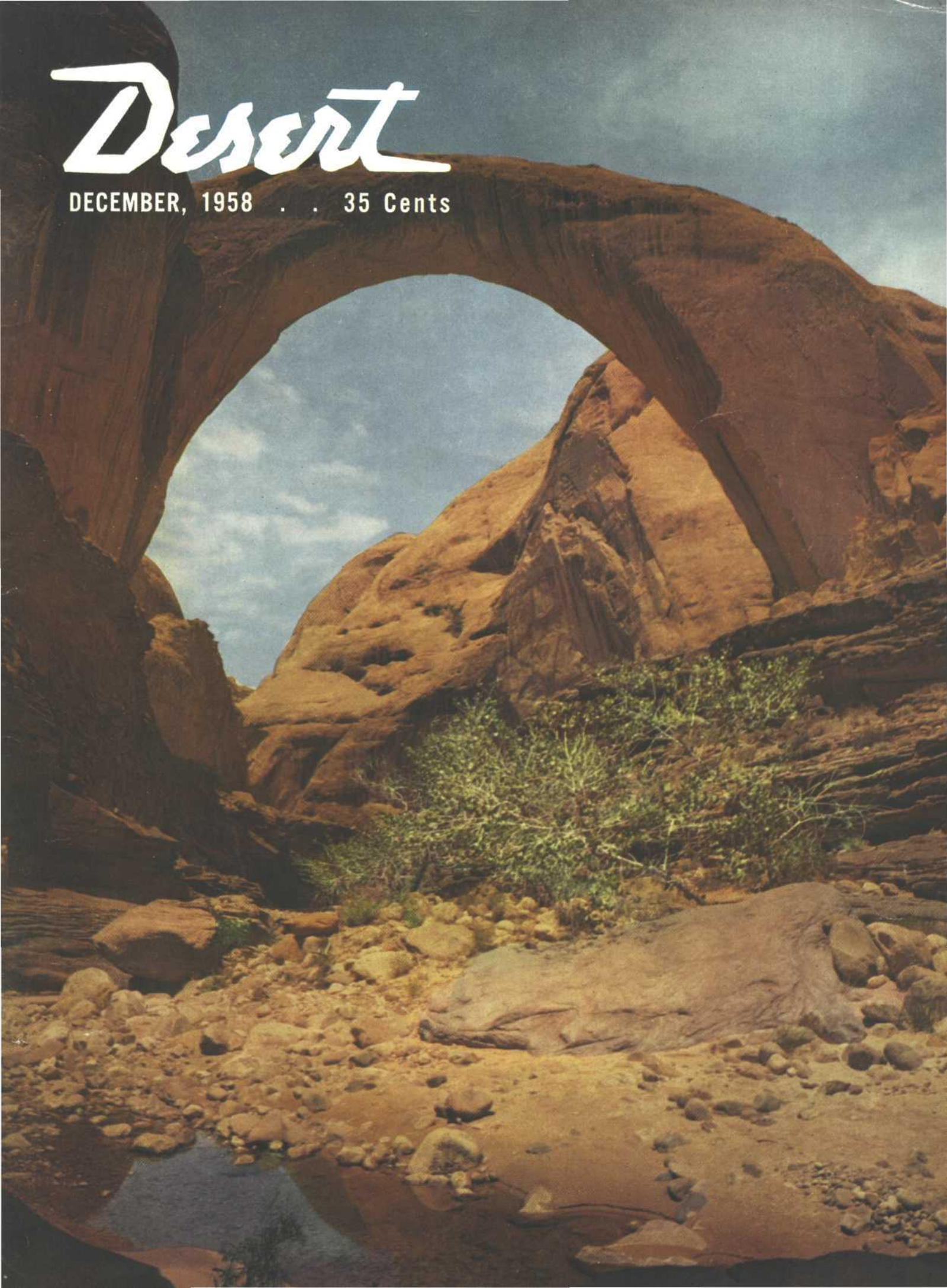


Desert

DECEMBER, 1958 . . 35 Cents



Papago Baby Shrine



In southwestern Arizona live the peaceful Papago Indians on a spacious reservation dotted with villages bearing strange names: Gu Achi, Kom Vo, Chukut Kuk, Pisinemo . . .

The Papago have accepted those of the white man's customs which fit them, but continue to celebrate old ceremonies in the manner of their forefathers.

Not often visited but most fascinating is the Papago Baby Shrine, one of the most unusual in the nation. A circle of blackened ocotillo branches partly enclose a pile

of rocks guarded by a tighter circle of upright sticks. These, peeled from the prickly desert plant, are white in the sun. When the next ceremony is held, they will be pulled out, added to the surrounding piles, and fresh ones placed in position.

According to legend, a flood once endangered the whole land, and the medicine men announced that only by the sacrifice of some Indian babies could the weather gods be appeased. The rock pile marks the burial place of these children. A service is held each year over their grave lest the floods come to Papagoland.



A NEW WORLD TO SHARE With Family and Friends--

Desert

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Desert Magazine is a thoughtful Christmas present that spreads its good wishes over the entire new year and for many years to come.

USE THE HANDY ORDER BLANK IN THIS MAGAZINE

and a colorful gift card bearing your name will be delivered to the subscription recipient a few days before Christmas.

DESERT CALENDAR

ARIZONA

- Dec. 5-7—Dons Club tour to Hermosillo, Mexico, from Phoenix.
- Dec. 6-7—Kennel Show, Yuma.
- Dec. 13—Rag Doll Parade, Bisbee.
- Dec. 14—Miracle of the Roses Pageant, Scottsdale.
- Dec. 14—Dons Club tour to Wickenburg, from Phoenix.
- Dec. 19—Christmas Party for winter visitors, Mesa.
- Dec. 20—Dog Show and Parade, Bisbee.
- Dec. 28—Desert Sun Ranchers Rodeo, Wickenburg.

CALIFORNIA

- Dec. 2-7—Southern California Open Golf Championship, Indian Wells.
- Dec. 5—Los Vigilantes Christmas Parade, El Centro.
- Dec. 6—Open House at new Desert Museum building, Palm Springs.
- Dec. 6—Christmas Parade and Community party, Victorville.
- Dec. 7—9th Annual Imperial Valley Kennel Club Show, Holtville.
- Dec. 13—Christmas Parade, Lancaster.

NEVADA

- Dec. 4—Community Golden Anniversary celebration, Fallon.

NEW MEXICO

- Late Nov. or early Dec.—Shalako Ceremony at Zuni Pueblo.
- Dec. 8-9—Northeastern New Mexico Hereford Breeders Association Show and Sale, Raton.
- Dec. 10-12—Tortugas Indians' three day pilgrimage and celebration, Las Cruces.
- Dec. 12—Matachines Dance, Jemez Pueblo.
- Dec. 12—Feast Day of Nuestra Senora de Guadalupe, Taos, Santa Fe and rural Spanish villages.
- Dec. 24—Candle Celebration, Ruidoso.
- Dec. 24-28—Christmas Ceremonial Dances at most New Mexico pueblos. Christmas Eve in Spanish villages celebrated with little bonfires for El Santo Nino, lighted before houses, in streets and before Nativity scenes.
- Dec. 26—Turtle Dance, San Juan Pueblo.
- Dec. 26-Jan. 1—Southwestern Sun Carnival, El Paso (Texas).
- Dec. 31—Deer Dance, Sandia Pueblo.

UTAH

- Dec. 10—Christmas Parade, American Fork.
- Dec. 13—5th Annual Engen Cup Slalom, Alta, Salt Lake City.
- Dec. 13—Community Sing, Kaysville.
- Dec. 21—Oratorio Society's annual presentation of The Messiah at Tabernacle, Salt Lake City.

Publisher's Notes

The season's greetings to our *Desert Magazine* family! The staff at *Desert*—especially the Circulation Department—has felt the Christmas spirit in a material way for the past six weeks, for our work-load in gift subscriptions started in mid-October and is still flooding in most happily.

Thanks to those of you who use a *Desert Magazine* gift subscription to express your Yule spirit.

And there's still time for last-minute Christmas gift orders to be sent through our Circulation Department to those whom you would like to have enjoy our great Desert Southwest for the coming twelve-month in the pages of *Desert*.

* * *

We've had a strong return of questionnaires from the *Desert* subscribers who were sampled last month. Early replies to the survey indicate that our publication has its place in this busy world. I think we can tabulate the results of the questionnaire in time to give a full report to you in our January issue.

* * *

Color on the back cover of this month's magazine is the start of a program that Randall Henderson, founder of *Desert*, planned long ago.

As editor of the magazine he has dreamed of offering our readers more high-quality four-color photos of the Southwest, and Randall's dream is now coming true. As the magazine grows, so will the colorful desertland become a reality in our pages.

* * *

It is gratifying to note that an increasing number of our new subscribers are families who live in the eastern states. We are glad to share the beauty and the wholesomeness of the wonderful desert country with our cousins "back there." Though *Desert Magazine* may be regional in subject matter, we do not want to be provincial in appeal.

* * *

Because I like to think of *Desert Magazine* as a friendly publication, and of our readers as our family, may I extend a sincere invitation to all of you to visit our Pueblo whenever you may be in the Palm Desert area? Drop in and enjoy the fine arts gallery of desert paintings, browse through the bookstore, visit our silversmith, wander through the printing plant if you choose—and by all means come into the publisher's office and tell us how we should put your magazine together. Your ideas are one of *Desert's* assets. I want you to feel that you, as a reader, own *Desert Magazine*—we who publish the journal only serve in trust.

CHUCK SHELTON
Publisher

ABOUT THE COVER . . .

It was in 1909 that an Indian first guided the White Man to the Rainbow-Turned-to-Stone—spectacular Rainbow Natural Bridge—at 309 feet high, the world's highest natural arch. Due to its inaccessible location in southern Utah, a visit to Rainbow is still an adventure. Hubert A. Lowman of Covina, Calif., took this photograph.



Volume 21

DECEMBER, 1958

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CHARLES E. SHELTON, Publisher

RANDALL HENDERSON, Editor

EUGENE L. CONROTTO, Associate Editor

BESS STACY, Business Manager

EVONNE RIDDELL, Circulation Manager

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Here is the story of a remarkable agate ledge called The Rockhound's Dream; of an old gold mining camp in the northeastern corner of Nevada; and of that camp's woman postmaster who spends her summers prospecting.

Trail To The Rockhound's Dream...

By NELL MURBARGER
Map by Norton Allen

For 14 miles the Jarbidge River cuts through a deep canyon lined with tall palisades and spires.

RENE SPRAGUE is postmaster at Jarbidge, Nevada, and she and I took a liking to each other the moment Charlie Harkinson introduced us. Dark-haired, full of life and fun, and slender as a school-girl, no one would guess Rene to be past her 40th year; yet, she proudly acknowledges a 30-year-old son, and admits she arrived here as a small girl in 1910—a year after D. A. Bourne made the first rich strike that sparked the rush to the canyon.

Rene makes her home in the old McCormick Building, the first structure in town to have wooden floors.

"Jarbidge was composed mainly of tents with floors made of a whitish clay which packed almost as hard as cement," said Rene. "These floors held up quite well under ordinary use, but were not suitable for dancing.

"My grandfather was a great hand at playing the fiddle, and we youngsters loved to dance to his music. Because we couldn't jig on the clay floors, each of us was given an end-board from an apple box on which to dance. You can imagine what a treat it was when we were allowed to come over to this new building and dance on its real board floors!"

Constructed of huge pine logs brought down from the surrounding

mountains, and sawn lumber freighted in on pack mules at terrific cost, Rene's residence, exteriorly, is showing the effects of wind and weather. Inside, however, it's as neat and attractive as a city home, with electrical appliances and TV, a bathroom with hot and cold running water, and other conveniences not seen in the average mining camp dwelling.

But Rene's world doesn't begin and end in her home, nor in the small adjoining postoffice where mail arrives twice weekly by stage from Rogerson, Idaho. Each summer, after most of the snow has disappeared from the higher ranges surrounding town, she surrenders the postoffice key to one of her fellow townsmen, and takes off for the hills.

Packing into the high wild Crater country to the southeast, where none of the named peaks has an elevation of less than 10,000 feet, Rene camps alone in a tent for a month or more at a time while performing the actual pick-and-shovel labor of building trails and working assessments on her mining claims. She's a good miner, too, and despite the fact she calls gold mining "a rat race," Rene admits she can't leave it alone!

She handed me a piece of rock the size of a small cantaloupe. It was ag-

ate—but such a confused medley of colors I have seldom seen in one stone! Basically it was red and pearl gray; but there were streaks of white, patches of clear translucence, and flecks of yellow and green.

Then Rene showed me a pendant and a pair of cufflinks cut from this material that even the most discriminating lapidary would be proud to own. The agate occurred in a ledge on Jack Creek, about four miles from town by road and foot-trail, she explained.

"My husband, Carl, and my son and I have staked the ledge as a mining claim which we call The Rockhound's Dream. There are tons of material in the deposit, and your readers are perfectly welcome to collect all they want for their own use.

"If you'd like to see the ledge," she added, "I'll be glad to take you up there tomorrow afternoon . . ."

As my answer, I turned to Charlie and asked if he'd care to go along? Charlie has celebrated more than 80 birthdays, but I know few men who can outwalk him over even the most rugged terrain. Charlie said he'd be glad to go with us.

I stayed that night in one of the old log cabins on main street. The next morning dawned bright and beautiful.

Shortly after breakfast, however, a few big white clouds began boiling over the skyline. As they met and merged with others, they changed from white to slate blue, and low rumbles of thunder began sounding in the west.

"It's been threatening to storm all week, but nothing has happened," Charlie said. "It's been so long since rain has fallen here I think it's forgotten how."

But despite Charlie's prediction, lunchtime found drops as big as nickels sending up little puffs of dust from the bone-dry street, and making black splotches on the old tin roofs and the dusty surface of my car. And when we drove to the postoffice, we traveled through a cold gray drizzle, mixed with hail.

We were watching the rain and trying to glimpse even a tiny break in the clouds, when Rene came dashing out, carrying two rock sacks and a prospector's pick, and trying to tie a scarf over her head and button her jacket—all at the same time.

"Ready?" she called brightly.

I asked if she thought we should still go.

"Oh, sure!" answered Rene. "It'll be good for us!"

With the summer rain silently falling on the gray road, the thirsty soil, and the earthen roofs of long-vacant log cabins whose empty windows dispiritedly reviewed our passage, we made our way along the single street of the old mining camp, crossed the Jarbidge River, and turned downstream.

I have a great fondness for the Jarbidge and the rugged land that cradles it. One of Nevada's few major waterways that eventually reaches outlet beyond the state boundaries, the Jarbidge winds for 14 miles through one of the most scenic canyons in the West. So narrow at the bottom that it can accommodate only the tumbling stream

and a one-lane unpaved road, the canyon walls are formed of sheer rhyolitic palisades and pillars hundreds of feet tall.

To superstitious redmen of an earlier day, this was the haunt of *Tsawhawbits*, most feared demon in their primitive world. Lurking behind the great stone pillars, which effectively screened his operations, this man-eating giant was believed to pounce upon unwary tribesmen, stuff them into a giant basket, and carry them back to his lair. According to the old legend, Jarbidge Canyon had been a paradise; but due to the depredations of *Tsawhawbits*, every redman eventually fled its confines to relocate elsewhere. Today, the memory of this mythical monster is preserved only in the legend and in the Americanized corruption of his name—Jarbidge—but the canyon has retained its strange and eerie atmosphere.

After traveling down the canyon road a couple of miles, we angled right on an older road for another three-quarters of a mile to a second fork. Here we parked the car and started walking.

Taking the right-hand fork, we skirted the shoulder of the hill on an old trail rutted and caved by the storms of nearly 50 winters. In the days when Jarbidge was young this had been the main stage and freight road to Rogerson and Twin Falls, Idaho. On the opposite canyon wall to the north the old road climbed sharply upward toward the Big Island—an elevated land area nearly surrounded by streams and the Jarbidge River.

"That was the beginning of the old Crippen Grade," said Rene. Its roadbed averaged not more than a foot wider than a wagon. The slightest

Jarbidge population fluctuates from four in the winter to 24 in summer.



Rene Sprague, Jarbidge's postmaster.

mishap could have sent a freight outfit plunging over the precipice and downward to disaster, hundreds of feet below.

In about 150 yards the long-abandoned turnpike carried us to Jack Creek and an old log-and-plank bridge, fallen to ruin. Here the music of running water was loud, and in the dense greenery flanking the bridge we caught glimpses of the stream as it cascaded toward its meeting place with the Jarbidge.

Making our way over the ravine on a pair of old bridge planks still in position, we left the freight road at the point where it crossed the stream, and



turned up Jack Creek Canyon on an even dimmer road.

Now we were walking through a sylvan loveliness not at all like the usual concept of Nevada and what geographers of an earlier generation termed "The Great American Desert."

Edging the crystal stream and pressing closely against the trail was a dense thicket of young aspens, willow brush, creek dogwood and small chokecherry trees. Mixed into this larger growth were wild roses, gooseberries, grouseberries and—to my surprise and delight—wild raspberries! Not even the attraction of a waiting agate ledge could keep me from halting occasionally to pick a handful of the soft delicately-flavored fruit. Climbing the lower canyon walls above the tangled deciduous growth were tall slender fir

trees, each like a Christmas tree waiting to be decorated; and above the firs marched the soft gray battalions of sage — inevitable hallmark of the highland deserts of the West.

As we walked single-file along the old road, we passed wild gardens of tall red-and-yellow columbines and blue larkspurs, and clumps of ferns; we saw hoofprints in the moist sand at the edge of the stream where a big buck deer had come down to drink, and we glimpsed a water ouzel as it flirted with the spray from a bright cascade.

Second of the old log bridges that had carried this sideroad up the canyon lay in the water so fallen to ruin that crossing upon it was quite impossible.

"Here's where we get our baptism in

the creek!" said Rene. "Do you like to wade?"

Jack Creek suddenly looked like a foaming millrace deep enough to float a barge and swift enough to sweep a horse off its feet. Actually, the creek was only a dozen feet wide, and perhaps a foot deep at this point; but its bed was composed of cobbles and rounded boulders, and the water was flowing swiftly.

"I can wade it if you can!" I retorted. We stepped into the stream. I've never felt anything as cold as the water that swirled up past the calves of my legs to my knees. But it was only a moment until we stepped out on the opposite bank, and again were heading up the canyon toward our destination.

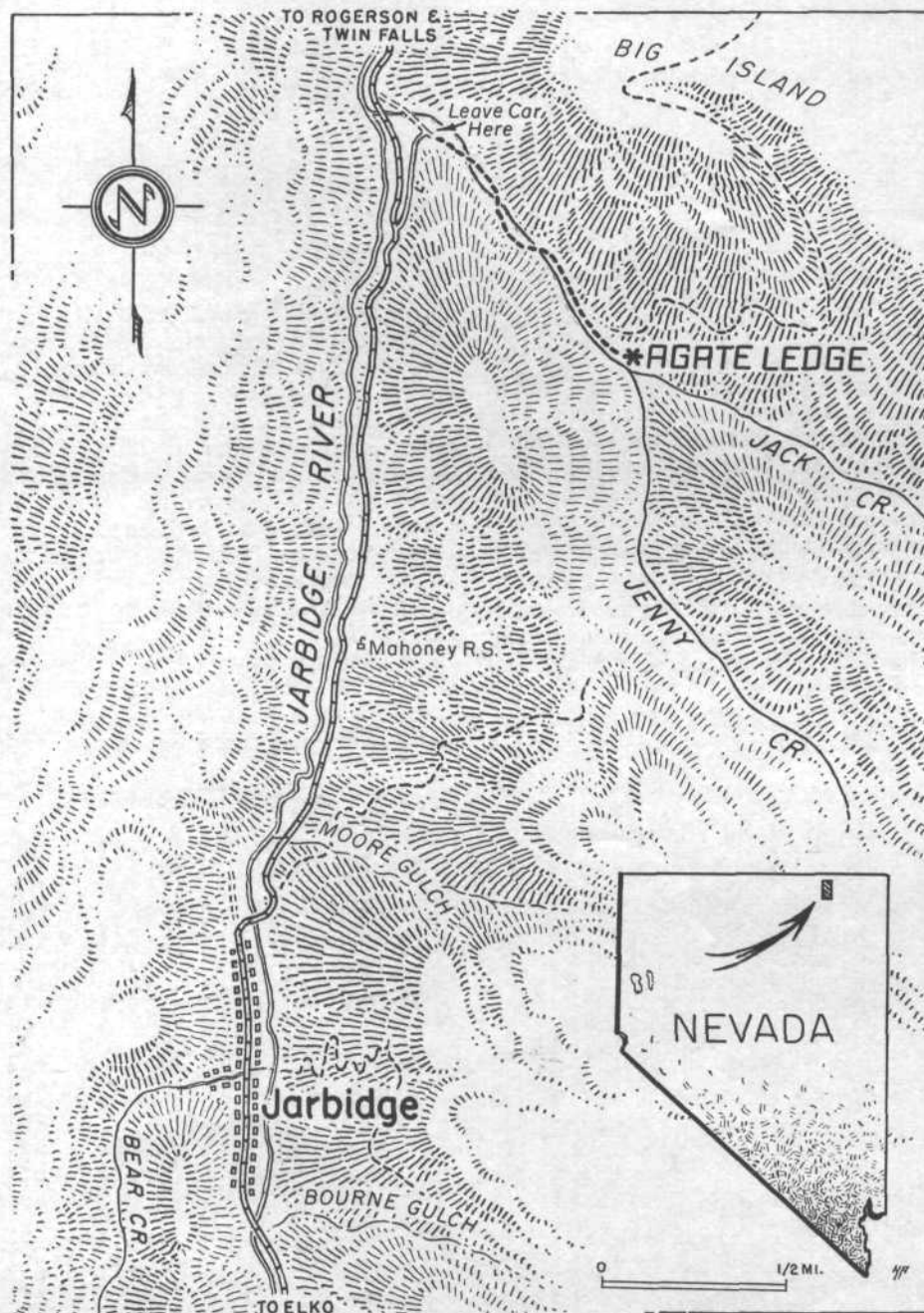
It was still raining steadily; and since there was no wind in the canyon, every leaf was freighted with water. Forcing our way through the dense underbrush, we were soon so wet that a subsequent wading of the stream was attended by no qualms whatever.

After this third crossing we had good hiking the remainder of the way. On the east bank of Jack Creek, near the point where Jenny Creek joins it from the south, we climbed up the canyon side a short distance to The Rockhound's Dream agate ledge.

Since it hasn't often been my good fortune to find cutting agate in masses the size of a young mountain, I had suspected that Rene, in her enthusiasm, had exaggerated the extent of this deposit. But now I saw that she had not been extravagant in her description. There were thousands of tons of material in sight and, barring drilling, no possible means of knowing how deep the agate extended below the surface. I found material in almost every color ranging from white to charcoal - gray, with plumes and blotches and streaks in half-a-hundred other tints—including a maroon so vivid I could scarcely believe my own eyes!

Although float scattered over the ground was weathered rather badly, material still in place was quite free of fracturing; and by digging below the surface, beyond the frost zone, this deleterious feature is largely eliminated.

Back at Jarbidge that night, after each of us had taken a hot bath, changed to dry clothes, and eaten a good hot supper, we spread newspapers on the big table in Rene's kitchen and laid out the several pounds of material collected that day on Jack Creek. Reappraising those samples while basking in the heat from the kitchen stove, I liked them even better than when I'd seen them through the chill half-light of that drippy afternoon. This was good material, and I knew from past



experience how rockhounds would react to it. But did Rene know?

"Are you sure it's going to be all right for me to write a story about this ledge?" I asked.

"Of course it's all right!" exclaimed Rene. "My husband and I like rockhounds! The main reason we staked this claim was to protect the ledge for collectors who might be excluded from the property if some commercial interests took it over. Naturally, we don't expect collectors to do any bulldozing or blasting on our property, and we won't have dealers hauling our rock away by the truckload. But, rockhounds are welcome to all the material they want for their own use."

The Jarbidge vicinity is not suited for wintertime collecting or camping. On the high passes that separate this locality from the remainder of Nevada,

snow comes early and lingers late. As a consequence, the road from the south (via North Fork, Charleston and Bear Creek Summit) is not usually open to traffic before July 1. The road from the north (via Rogerson and Three Creek, Idaho) may be traveled over most of the year, and the ground at Jarbidge generally is free of snow by April or May.

As for accommodations, the old gold-mining camp hasn't much to offer. There are a few cabins which can be rented in summer, and the Forest Service maintains a delightful campground in the trees along the river. Gasoline and oil can be purchased, but no groceries. Fishing is said to be good. As for the wild red raspberries, I can testify that they are strictly food for the gods—especially when eaten on a rainy afternoon while agate adventuring with two good friends!

Pueblo Portraits



Dancer of San Juan Pueblo, New Mexico. She holds ceremonial arrows.

By JOHN L. BLACKFOR

TRUE OR FALSE:

Here's the monthly I.Q. test for the desert fraternity. But you do not have to live among the

dunes and cactus to make a passable score. The questions cover a wide range of subjects—history, geography, botany, minerals, Indians and the general lore of the desert. These monthly lists of questions are designed both as a test of knowledge for the desert student, and as a course of instruction for those who would like to become better acquainted with this desert land. Twelve to 15 is a fair score, 16 to 18 is good. Only the super students get over 18. The answers are on page 34.

- 1—A rattlesnake has two fangs. True _____. False _____.
- 2—Ocotillo is a species of cactus. True _____. False _____.
- 3—The famous Lost Dutchman mine in the Superstition Mountains of Arizona has been found and is now a large gold producer. True _____. False _____.
- 4—Pioche is the name of a historic mining town in Nevada. True _____. False _____.
- 5—Mark Twain once worked on a newspaper in Virginia City, Nevada. True _____. False _____.
- 6—The University of New Mexico is in Santa Fe. True _____. False _____.
- 7—The floor of Death Valley is below sea level. True _____. False _____.
- 8—Salt River Valley in Arizona gets its irrigation water from the Colorado River. True _____. False _____.
- 9—Feldspar is a harder mineral than calcite. True _____. False _____.
- 10—Woodpeckers sometimes make their homes in Saguaro Cactus. True _____. False _____.
- 11—Ranchers along the shore of Salton Sea use the sea water for domestic purposes. True _____. False _____.
- 12—The largest city visible from the summit of Charleston peak in Nevada is Las Vegas. True _____. False _____.
- 13—The Mormon leader Joseph Smith never saw the Great Salt Lake. True _____. False _____.
- 14—Geronimo was a notorious Navajo chief. True _____. False _____.
- 15—The junction of the Green and Colorado rivers is in Utah. True _____. False _____.
- 16—Organ Pipe National Monument in southern Arizona derives its name from the fluted rocks in that area. True _____. False _____.
- 17—The Jicarilla Indian reservation in New Mexico belongs to the Apaches. True _____. False _____.
- 18—Papago Indians in southern Arizona harvest the fruit of the Saguaro cactus for food. True _____. False _____.
- 19—Some of the richest placer gold strikes in the Southwest have been made in sand dunes. True _____. False _____.
- 20—Highway 80 crosses the Colorado River at Blythe. True _____. False _____.

DUEL IN THE DUNES



By E. P. HADDON and MARY BRANHAM

Gila monster tracks. Heavy body made furrow between foot prints.

THIS WAS the time of morning — two hours before dawn — when much of the desert wildlife is abroad, and we had come to observe the passing parade. We parked our Jeep beside a cluster of small dunes in the desert north of Las Vegas and west of Nevada's Sheep Range, in the land of bristling Joshua trees. The white dunes glistened in the bright glare of a big desert moon.

Three rattle-tipped sidewinders had crossed in front of us in the last half-mile of our wandering, and now we sat silently on the side of a dune to look in on the world these reptiles share with other small creatures.

A many-entranced burrow was a few feet from us. Numerous other den entrances, mostly at the foot of small shrubs, also were within sight. Soon, Kangaroo rats were scampering about, oblivious of our motionless presence. We scattered grain about, and the dainty creatures were eating at our feet—even taking grain off the toes of our boots.

A smaller Kangaroo rat that tried to move in too close to the food source was unwell-

comed by his larger rivals. They stopped gorging their cheek pouches long enough to give the runt a thrashing with their long legs. But, the small mouse was not to be outdone. It waited until its opponents had deposited pouches of grain in nearby burrows, and then moved in on their storehouses. With cheeks bulging it scampered beneath a shrub covering the entrance to its den.

A deadly newcomer appeared on the stage. Less than two feet long, the appropriately-named sidewinder is one of Nature's cleverest adaptations for traveling over loose sand. Its body literally glides in sideward loops, making for good silent traction—its tiny rattle ready to buzz positive defiance to antagonists of any size.

The curtain suddenly rose on a desert drama. One of the big rodents caught the smaller Kangaroo rat again raiding its storehouse, and launched a vigorous attack on the thief, driving it away.

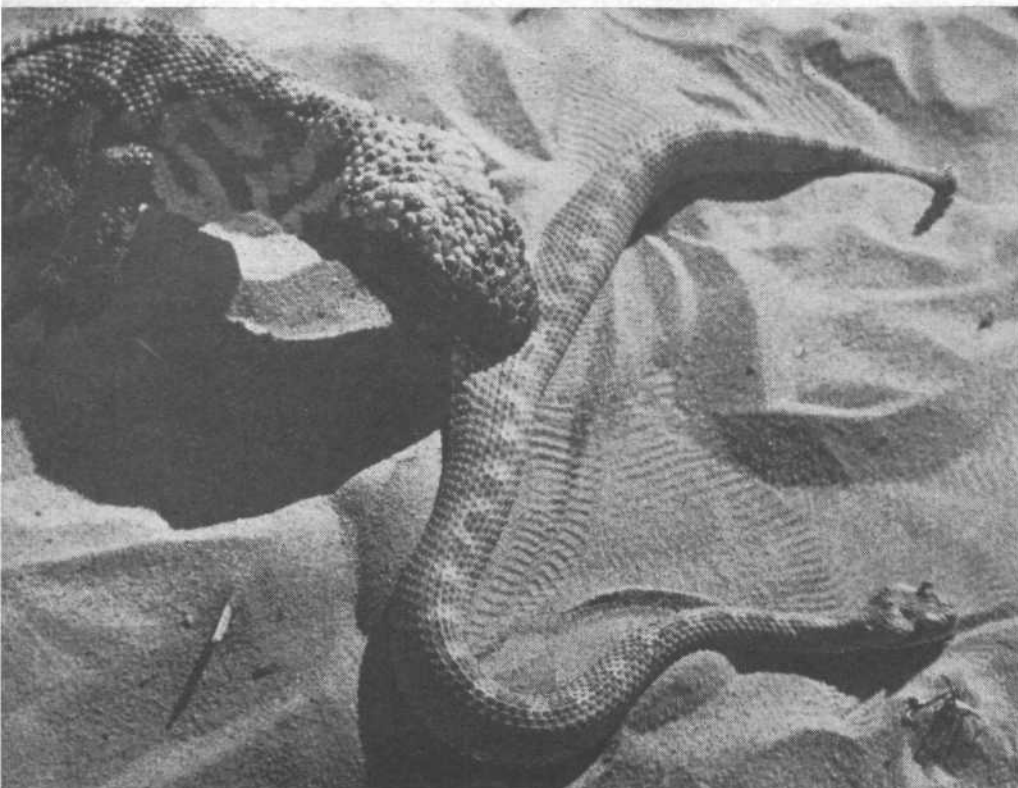
With movements so swift the eye

could hardly follow, the unnoticed rattler's arched neck straightened out with a speed no creature could dodge—and the snake sank its sharp curved fangs hard into the large Kangaroo rat's flesh. There wasn't a sound. The rattler quickly drew back into position for another strike — an unnecessary gesture, for the Kangaroo rat quivered helplessly and fell on its side. Cautiously, the rattler approached the dead creature, touched its nose against the rodent, moved completely around it and nudged the still body. Then, with open mouth, it drew the rat downward into its throat.

During that interval when there is a blending of moonlight and dawn, a jackrabbit crouched on a dune to our right, silhouetted against the eastern glow. His body was rigidly still, the only evidence of life a slight twitching of ears. In a wild burst of speed the rabbit disappeared.

With the coming of dawn, many doorways to the inner dune were sealed against the heat of the coming desert day, but to some of the doors that remained open, the slanting sunlight was

The unmistakable tracks led them to an incredible sight: a struggle between a Gila monster and a sidewinder.



an invitation to emerge and make tracks in the sand. Dapper and gaudy, a collared lizard perched on a nearby ridge in the early sun, and beyond him we saw heavy tracks where a Gila monster had dragged itself clumsily along.

"Reading" the sand was interesting; here was the record of what had passed during the windless night. A few fluffs of fur, two rabbit paws and mussed-up sand — here fox and rabbit had

"After a few moments, the sidewinder straightened out, as though disgusted with the whole situation."

collided; a thin, even line through the sand made by a small creature's tail; a mound of freshly-turned sand where a coyote had dug up its dinner.

In the sand before us we saw the most unexpected duel of all. Ahead lay the Gila monster we were tracking, his powerful jaws grasping the mid-

section of a deadly sidewinder. The rattler's fangs were imbedded in the tough beaded skin on the big lizard's neck—sunk so deeply the snake quivered as it strained to withdraw them. Any other victim would have been writhing in pain, but not the Gila monster. Nor was there evidence that the rattler was suffering anything more than hurt dignity at being held in the monster's vice-like grasp.

Fortunately, for the snake, the Gila monster had only pinched the flesh of one side. Had he taken a firm hold across the spine, it would have been fatal for the snake. Contrary to popular belief, rattlesnakes are delicate creatures and their backs are relatively easily broken.

Once its fangs were free from the lizard's neck, the snake thrust them into the enemy's head. After a few moments the sidewinder straightened out, as though disgusted with the whole situation. The Gila monster opened its drooling jaws, from which oozed a mixture of saliva and venom. The rattler slid away and retreated into the first open doorway it found, seemingly none the worse for the encounter.

We watched the Gila monster for the next hour, curious to see what effect, if any, the snake's venom would have on it. The lizard slowly moved from shrub to shrub in the dunes, apparently unharmed.

Two deadly reptiles had dueled, each equipped with death-dealing venom, and the battle had ended in a no-decision draw.

Gila Monsters In Nevada?

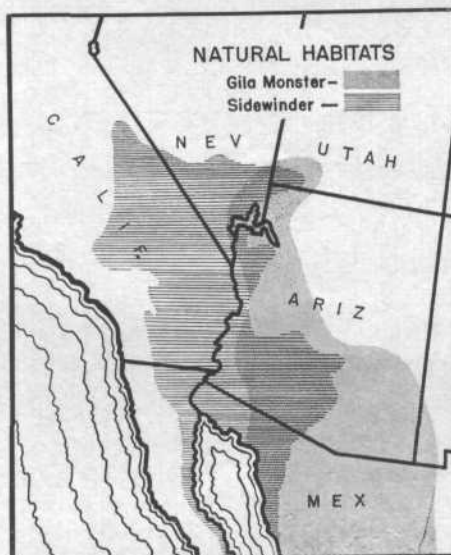
Gila Monster

HABITAT — The Gila monster's natural habitat generally is regarded as being restricted to the Arizona-Sonora border country, and readers of this story may wonder what one of these poisonous lizards is doing in Nevada. The range of distribution (see map) extends northward across the tip of southern Nevada and even into the southwestern corner of Utah.

DESCRIPTION — 12-16 inches from snout to vent; the thick tail an additional one-half to one-third head - body length. Tail usually banded; body color, in general, is pinkish or dull orange, and black. Sides of face, underside of head, and feet usually blackish brown to black. Thick skin is beaded.

FOOD — Bird and reptile eggs, nestling birds, rodents, young rabbits.

MISC.—Only poisonous lizard in U.S.; can climb trees; nocturnal.



Sidewinder

HABITAT — The sidewinder or horned rattler occurs in the Lower Sonoran Life-zone, as does the Gila monster. But, the sidewinder's range is more westerly, taking in California's Mojave and Colorado deserts. This small rattler frequents the sandy flats and washes of deserts, especially where there are scattered bushes and hummocks.

DESCRIPTION—1½ to 2½ feet in length; has stouter body than most other rattlesnake species; relatively large broad head; rattles on tip of tail. The hornlike projection over its eyes is its most distinguishing characteristic. Color varies from cream, pink, tan, light brown to gray — blending well with ground.

FOOD—Small mammals and lizards.

MISC.—Primarily nocturnal, but sometimes active at dusk and daytime, especially in spring and fall.

We have two first prize winners in our . . .

PICTURES OF THE MONTH

. . . contest. The judges couldn't decide which of these photos to give first, and which to give second place honors to—so they called it a tie . . .

The Silent Struggle

The young Saguaro Cactus and the Ironwood Tree grew up side by side. Prevailing winds bent the Ironwood over the Saguaro, causing constant irritation that twisted the cactus into this grotesque shape. But as it grew outward instead of upward, the Saguaro killed the Ironwood's main trunk. Photograph was taken on the McDowell Indian Reservation in Arizona by Bob Payne of Phoenix. Camera data: Busch Press Camera; Pan X Film.



Gecko

The variegated ground gecko lives in southwestern Utah, southern Nevada, southern California, Arizona (except the northeastern corner), Baja California and Sonora. The dark bands on the body are walnut-brown, the light bands a dull yellow. Rarely seen in the daytime, this lizard's chief enemies are nocturnal desert snakes, especially the leaf-nosed snake. Geckos feed on insects. Dick Randall of Boggs, Wyoming, is the photographer. He used a Hasselblad Camera; Verichrome Pan film; No. 6 flashbulb.



The Old Dutchman's Lost Ledge of Gold

The prospector drove his burro cart out of the rough and uninhabited country south of Picacho with 50 pounds of gold ore in his pack. That night he revealed the story of discovery, and next day disappeared.

By HAROLD O. WEIGHT
Map by Norton Allen

"IT WAS 1910 or 1911 when the old Dutchman brought his rich ore into my camp," Ed Rochester said.

Through that long-ago summer Ed had been running a wiggletail in the big mine at Gold Road, north of Oatman, Arizona. A wiggletail is a stoping drill. It won that nickname because of the movements the drill makes while operating. For reasons equally clear, a stoping drill also was known as a "widow-maker." In those days they were operated without water, and since the drilling was always upward, the operators were forever fogged in a cloud of fine dry quartz dust that almost guaranteed silicosis.

"After a while I began to get clogged up in the lungs," Ed went on. "I knew it was time to quit mining. I had been thinking about prospecting along the river, so that fall I went down to Needles and bought a boat for \$10 from a Mojave Indian (Ed pronounced it 'Moharve', the way almost all the old-timers do).

"It was one of those Mojave boats, designed by the government for use on the Colorado. A rowboat, 16 to 20

feet long, practically flat-bottomed, with quite a flare to the sides but running straight back from mid-bow with no closing in at the stern. It was a wonderful boat for shallow water. The Indians had used them in that country back to the '80s. They used them to gather up wood and haul it in to Needles where Monahan & Murphy would give them half the selling price for all they brought in.

"I loaded up with beaver traps and groceries and necessities, and came trapping down the river. Slow."

In the course of time Ed reached an ideal camping site on the California side three or four miles above the future site of Imperial Dam. It was a little *rincon*, formed where a wash entered the Colorado, accessible to both river and shore.

He remained there several days. One morning it rained. After the weather cleared, Ed built a fire to dry out clothing, bedding and equipment. That afternoon he heard a crashing and rumbling from the shore. The old Dutchman, guided by the smoke from Ed's fire, had come into camp.

"He had two burros hitched to a

Ed Rochester at his camp on the Colorado during his Beaver-trapping days. It was here he met the Dutchman who had made the gold strike.

cart," Ed said. "A cart made of the front half of a wagon — the front wheels, the hounds, the rocking bolster. It was a pretty heavy outfit for two burros. The old man was perched on top of a pack lashed to the bolsters.

"He was confused and hungry, so I invited him to supper. He ate as if he was starved to death."

After the meal, as they sat beside the fire in the gathering dark, the old Dutchman said: "You got a big boat there. How about putting me across the river?"

"Maybe I could put you and the animals across," Ed answered, "but not your cart."

"Well, that's all right," the Dutchman said. "And I'll pay you well."

He went to the cart and took out a bundled-up piece of canvas. It contained 50 pounds of ore — beautiful rock—a yellowish quartz so rich that bright free gold showed in every chunk. From the pile he selected three pieces and gave them to Ed.

"You put me and my burros on the Arizona side with enough grub to get to Quartzsite," he said. "There's a lot of gold in those rocks."

As the night hours slipped by, the Dutchman—well fed and warm—told Ed the story of his wonderful ore.

He had started out from Quartzsite with a grubstake furnished by William E. Scott, the local grocer. He worked down through the Trigo Mountains, stopping for a while at Jim Butler's camp. He reached the Colorado opposite the town of Picacho, and crossed to California on the crude ferry.

The old Dutchman did not stay

long in Picacho. Striking down river in the direction of Laguna Dam, he prospected as he went. This country in the big bend of the Colorado is a lonely land, even today, with few jeep trails, few visitors and no permanent inhabitants.

Soon he came to a little basin fairly high up in the hills. From it he could see one little green spot of Colorado River bottomland. He couldn't identify this part of the river. He also saw, in a southerly direction, rising smoke which he reasoned came from the settlement at Laguna Dam.

There was a waterhole in the basin, so the Dutchman camped and prospected. And in this vicinity he found his high-grade vein with gold sticking out of the rock right on the surface of the ground. He settled down to work the strike as long as his supplies would last. But, they "lasted short," for his

burros broke into the grub sacks and ate or ruined most of the food. The old Dutchman had to get out or starve.

He hitched up, loaded the ore he had dug, and headed for the smoke at Laguna Dam. He was nearly out of the mountains when he came to steep-walled Senator Wash, which he could not cross in his cart. So he turned down the gorge toward the river. Then he saw the smoke from Ed Rochester's camp, and made his way to it.

Now he wanted to get back to Quartzsite, pay Scott for his grubstake, get together another outfit, and return to his promising strike.

Next morning Ed and the Dutchman ferried the burros and supplies across to Arizona Territory.

"It was quite a chore," recalled Ed. "We had to throw the first animal down, tie him, and then skid him into the

boat on skinned cottonwood poles. On the other side it was even harder skidding the animal out of the boat onto solid ground.

"Then we started on the jenny. We had quite a time with her. She had one ear cropped off—the sign of an outlaw burro in those days. When we did get her across, she bogged down between boat and shore. We had a time digging her out of that mud."

After the old man and his outfit departed in the direction of McPherson Wash, Ed returned to his camp on the California side, and next day pulled out down river.

In Yuma he sold the three pieces of gold ore at Sanguinetti's store.

"Sanguinetti paid me \$62 and one of his big black cigars," Ed said. "He always gave you a cigar when he bought gold from you."

"Then I sold my boat for \$7, shipped the beaver furs I had trapped, sold the traps, and went to Los Angeles."

Ed hadn't even learned the Dutchman's name. "We never asked people their names when we met in the back country in those days. Names didn't amount to anything, anyway."

But, he did not forget the old prospector and his gold. Ed was in Quartzsite the following year, and he asked Scott about the Dutchman. Yes, the storekeeper remembered him, but hadn't seen him for a long time. Yes—he'd given him groceries the year before—but he did that with every old prospector who came by, whether they had money or not.

Jim Butler—the man with whom the Dutchman had stopped off in the Trigos before making his strike—was in the store. He broke into the conversation.

"Why, one of that old fellow's burros came into my camp about a month ago!" he said. "You know—that mean dock-eared jenny. I recognized her as part of his outfit. But, I haven't seen him."

No one, as far as Ed knows, saw the old Dutchman after they parted on the bank of the river.

The same year Ed went to Quartzsite to see Scott and Butler, he made another trip down the Colorado. The big summer runoff, backed up behind Laguna Dam, had so changed the river bottom that he no longer recognized the channels. The immense overflow had mudded in all that country, but he did locate the Dutchman's cart stashed in the arrowweed. The mud was so deep only the top of the wheels showed.

The old man had not come back to reclaim his cart, and looking up into



the tangled mass of hills, Ed wondered if he had ever gotten back to his golden ledge.

A year's weather had erased all traces of the cart tracks, and Ed was not equipped for a long search. So he continued on down the river, stopping at the Buena Vista Mine (later known as the Senator). None of the miners there had seen the old fellow.

Another two years passed before Ed again camped in the *rincon*. No trace of the cart was evident in the mud this time. With a canteen and some grub, Ed hiked back into the savage barren hills, the old man's description still vivid in his mind.

"I found a little basin from which you could see a little speck of river bottom," Ed told me. "And there was a waterhole, too. I found where he—or someone—had hacked the upper limbs off ironwood trees for burros to browse on. With a modern-day prospector, there would have been no trouble finding a camp. There would have been a pile of tin cans. But in those days we seldom used canned rations, and there was no sign of a camp in the basin.

"But the rest—everything else—fitted. It was as the old man had described it. There was just one thing wrong—I found the ledge, but couldn't find the gold."

The basin Ed located lies to the north of Rochester Basin. It contains perhaps 100 acres, and has two fair-sized washes cutting through it. Ed traced a route over which the Dutchman could have gotten into the basin with his cart from the Picacho side, and a way he could have gotten out, heading down toward Laguna Dam. Following this trail, Ed came to where the prospector's cart would have been blocked by Senator Wash. Ed turned down the wash bank, saw how the old man could have driven to the camp on the river.

Again it all fitted together. No missing links, no false notes—but also no gold.

In the intervening years, Ed and the late Earl Kerr of Picacho, made many



Old-timers on the porch of the C. V. Kuehn store in Quartzsite in 1915. From left: Daddy Woods, Frank Weber, Jim Butler—the man who saw the old Dutchman in the Trigos, J. Chamberlain, Gus Anderson and Felipe Scott—son of the man who grubstaked the Dutchman on his last known trip.

attempts to find the Dutchman's gold. "And we kept the story to ourselves because it seemed so certain the gold was there. After all, I had seen it!"

But, the vein eluded them. Why? Possibly it was a small cropping and the Dutchman had taken all the rich ore that showed. More likely, the basin Ed found is not the only one that fits the Dutchman's description. Or possibly, intentionally or by chance, the old prospector twisted his story.

Almost every ore is as distinctive, to an expert, as a man's fingerprints. Since that day, Ed has never seen ore identical to that beautiful yellowish quartz with its golden burden. The nearest thing to it is the rock of the old Senator Mine. But, once he did hear an ore described that might be the Dutchman's.

"A tramp miner who had put in quite some time prospecting in the Trigos told me he had seen Ramon—an Indian I knew who lived around

Ehrenberg long ago—pounding up some funny ore that looked like nothing this miner had ever seen in that country. A yellowish quartz rich in gold."

Had Ramon found the little basin and its treasure? Or was the ore he was crushing the remainder of that 50 pounds the Dutchman was taking back to Quartzsite?

Today, Ed's campsite in the little *rincon* lies under the waters behind Imperial Dam. But the country of the Dutchman's lost ledge remains untamed, uninhabited, unchanged. And as we stood on the high ground not far from the vanished *rincon* and looked into the hills from which the Dutchman's queer cart with its precious cargo had rumbled nearly half a century gone, Ed said: "If I had just back-tracked him that first time . . .

"But you've got to understand—in those days and around this country gold was very common. You saw it everywhere. You didn't pay too much attention. A fellow brought in a piece of gold—why, it was just a new prospect. Yeah. Good ore. Good ore! But you didn't go wild about it. You didn't ask him where it came from, or anything like that.

"If he wanted to, he told you. Like the old Dutchman. And if he hadn't told me, I wouldn't have asked. It would have been as impolite as asking him his name.

"Still—if just that once I had! Those big cart wheels would have left signs any good tracker could have followed right back to the basin—and to the Dutchman's gold."

Steep walls of Senator Wash, left, prevented the Dutchman from driving his cart to Laguna Dam. Ferguson Lake Road, right, was built a few years ago.



Out of place birds that lose their way into the strange environment of the desert add interest—and a touch of mystery—to the outdoor scene.

Lost Birds in a Strange Arid Land

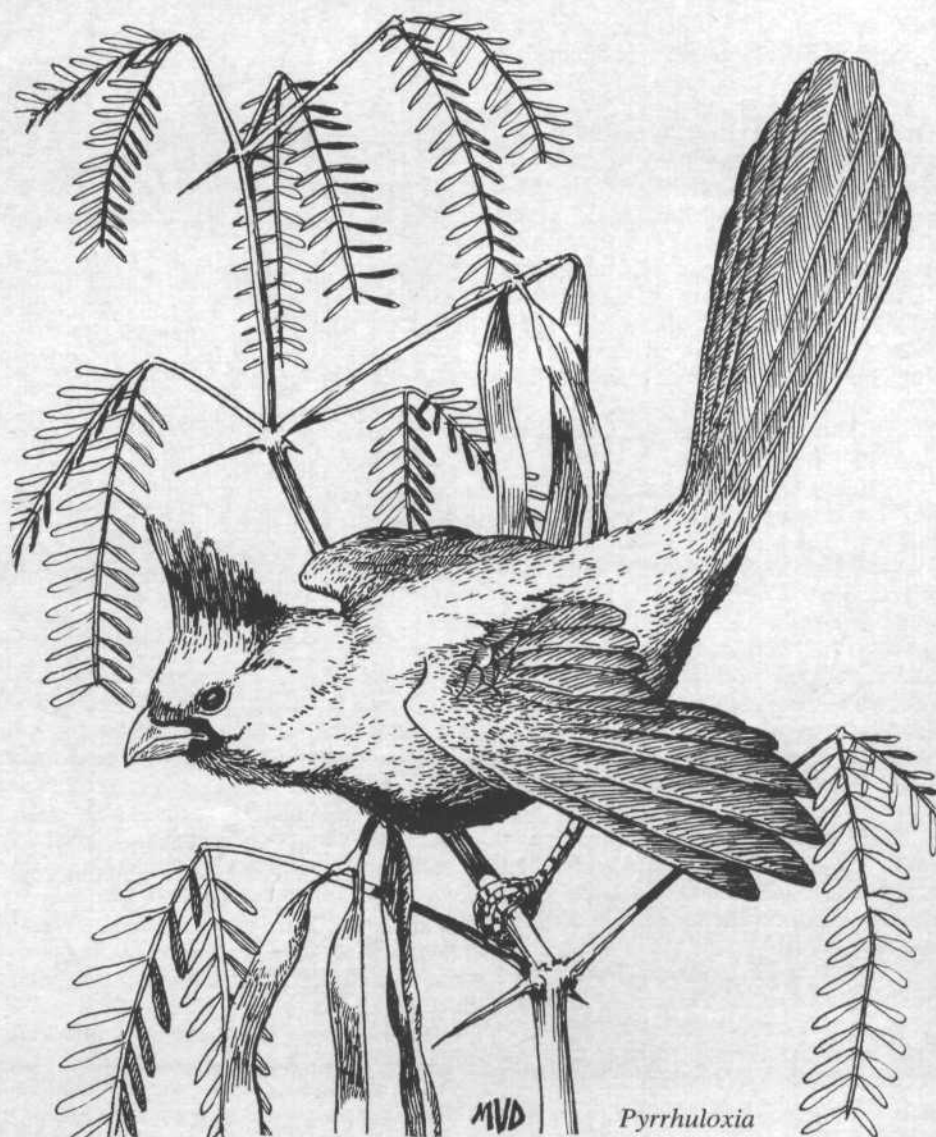
By EDMUND C. JAEGER, D.Sc.
Curator of Plants
Riverside Municipal Museum
Sketches by Morris VanDame

ONE HUMID August afternoon while dark storm clouds hung low over the mile - and - a - half-high San Bernardino Mountains and adjacent desert slopes to the northward, I paused for lunch in the creosote bush belt of the Mojave Desert. Altitude here was 2800 feet.

Soon lightning knifed its zigzag course through the black clouds, and the ominous accompaniment of deep rolls of thunder followed. After several especially sharp peals of thunder, dark curtains of rain descended over the mountains, and strong gusts of pine-scented winds swept down upon me.

And with the breezes came some strange avian visitors — birds seldom seen on the low desert floor. Evidently frightened by the storm in their mountain home, a flock of Gambel's Chickadees and several Plain Titmice had flown down into the more peaceful land of creosote bushes.

The strange environment proved no obstacle. Almost immediately the chickadees began flying from bush to bush in their typical erratic fashion, turning upside down and twirling about on the woody stems of the plants while diligently hunting insect food. Nor did they neglect their chickadee songs and sociable call-notes as the band of 15 to 20 birds kept well together.



The Titmice were ill at ease at first, probably because they had no leafy oak trees to be in. But soon I heard their scratchy but pleasing chickadee-like notes; indeed, the strange surroundings stimulated them to new efforts at music-making.

As soon as the weather in the high altitudes cleared, the birds left as quickly as they came.

For reasons often unknown birds sometimes stray from their usual haunts or get lost on their migratory flights and end up far from the long-established nesting areas of their species. It is always interesting to find such misplaced birds, and to observe them as they seek adjustment to their new surroundings.

Early one morning in April, while seated before my campfire in a broad smoke tree wash in the mid-Mojave

Desert near Amboy, I noticed nearby a small olive-brown bird of unusual markings: pinkish legs, the center of the crown bore an orange stripe bordered by a narrow black line. It walked from bush to bush, and I sensed that this was no common bird, but a total stranger to the desert, doubtlessly a spring migrant far out of its range. It was a forest-dwelling Eastern Oven-bird, one of the most interesting of the ground warblers, its name derived from the architecture of its nest. I kept my sparrow-sized bird under observation for 30 minutes, only once hearing its loud penetrating song, *tee'-a-cher, tee'-a-cher*.

Dr. Francis B. Sumner of La Jolla saw an Oven-bird in May, 1920, on the Mojave Desert near Lavic where there was a windmill and water. It flew in under the shade of a truck

ON DESERT TRAILS WITH A NATURALIST

parked near the dry lake, and began walking about in characteristic teetery fashion. This was the first observation of an Oven-bird in California. Perhaps mine was the second.

The Southwestern desert has its own warbler, the Lucy Warbler, also known as Desert Warbler and because of its habit of frequenting and nesting in mesquite thickets, Mesquite Warbler. I identified my first one under rather strange conditions and certainly in an out-of-the-way place for this active somber-colored brush-loving bird.

Tom Danielsen and I were returning home from a pine-nut gathering expedition in Southern Nevada on a very warm afternoon in mid-September. Stopping at a rather desolate-looking service station, we noticed a small sharp-beaked bird hopping about in the shade at our feet. It was indifferent to our presence, and with but slight difficulty Tom reached down and picked it up. The little fellow was not only fatigued, it was very thirsty. We got it to take liquid by dropping water from the end of a finger into its open beak. This revived it considerably. It was evidently in southward fall migration, and in passing over the hot desert had become exhausted. The station attendant said many birds came here in summer, both by day and night, many so spent and dehydrated they never revived.

We put our Lucy Warbler in an open-screened can wrapped about with a wet towel to keep down the temperature, and sped westward to the mountains where we turned it loose in the cool shade of trees.

Handsome Visitor

The handsome Pileolated Warbler (olive-green back, yellow face, distinctive velvet-black cap, and bright yellow underparts) winters in Central America. It is rarely seen on our Sonoran deserts except during migratory flights. I became acquainted with this restless bird sprite one spring afternoon while walking among the Joshua trees on the Mojave Desert. A friendly male Pileolated Warbler appeared before me, flitting from bush to bush. To my amazement it flew to the shoulder of my companion, and for some moments rested there. I was so near I could see in greatest detail his handsome feathered coat. He was evidently a stray, taking time out for a moment's rest and opportunity to feed while on his migration flight.

Another of my great bird surprises was the finding of a black-hooded pink-billed Harris Sparrow in the desert of Sonora. This bird breeds and nests in far northern Canada west of Hudson Bay. In migration and during the winter months it is found in the west-central states, especially in east-

ern Nebraska, western Kansas, Oklahoma and Texas. The last place I would have expected to find one of these large sparrows was on the desert—yet on a December day I saw a lone and probably very lonesome one deep in Papagoland along the Sonoita River where extreme arid conditions prevail.

The bird was loitering about like a lost soul in some ironwood trees. Its plaintive minor-keyed whistling song, *wee, wee, wee*, first drew my attention to this handsome finch. The black adornment of its head-top, face and breast are similar to the markings of the common Desert Sparrow.

"A cardinal in red and gray," is a short description sometimes given for the aristocratic Pyrrhuloxia. Its prominent but stubby yellow beak has earned for it the name Parrot-bill. I saw one of these beautiful crested birds while camped in a broad sand wash on the west coast of the Gulf of California. The Pyrrhuloxia is a finch closely related to the grosbeaks, buntings, goldfinches and towhees—all members of the *Fringillidae* family.

First Observation

The Pyrrhuloxia I saw that late afternoon was a male made conspicuous by the red of its face, throat and upper breast; its tail was dull red, and back gray. This observation may have been the first of this bird west of the Gulf. Ordinarily, it is only seen in and around the oak forests and lowland brush and tree thickets of southern Arizona and Sonora and southward to Sinaloa and Puebla.

A related Pyrrhuloxia frequents the oak forests at the lower end of Baja California, but differs from its northern representative by being smaller and

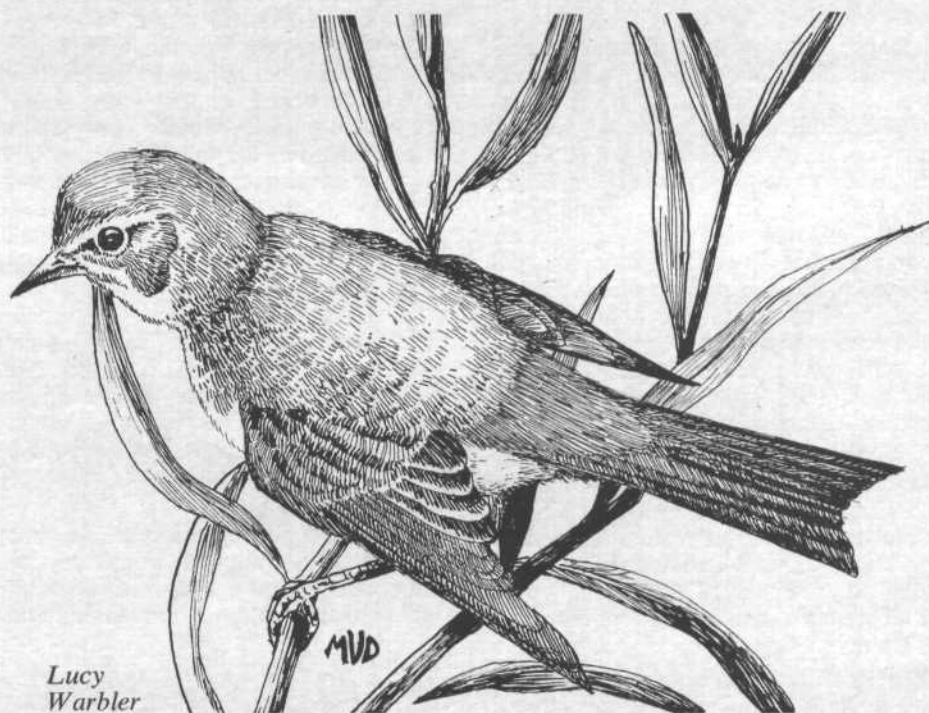
having a larger beak. There is another Pyrrhuloxia in Texas and northeastern Mexico that is darker than the Western birds.

Misplaced Mammals

Once in a while we find mammals out of place, too. Some years ago Lee Smith of the Camp Cady Ranch on the Mojave River where it flows through exceedingly dry creosote bush flats, showed me porcupine quills plucked from the muzzle of his dog. This is the only time I've ever seen evidence of forest-dwelling porcupines on the bleak Mojave Desert. The nearest area known to harbor porcupines was 50 miles away.

At the time of this visit to Camp Cady, my host housed me in a cottage which had a screened sleeping veranda jutting out over the river bank. When I awoke in the early morning I was delighted with a rich medley of bird songs, among them the notes of a flycatcher. In the screw beans and willows was a pair of Vermilion Flycatchers—an unexpected and stimulating find. The only other desert areas where I have seen this fine colorful bird are at Mecca near the Salton Sea and at the oasis of China Ranch near Tecopa on the Amargosa River, two small Vermilion Flycatcher islands in a vast sea of aridity.

I hope this account of misplaced birds will induce you to watch for similar occurrences while on desert wanderings. Many stimulating surprises can be ours if we are alert to things we see and hear in the outdoors. The best times to see lost birds are in autumn and spring, the usual periods of migration.



Lucy Warbler

DOLPH NEVARES OF DEATH VALLEY



Farmer, prospector, miner and pioneer—Dolph Nevares lived his life in Death Valley and became a fragment of its colorful history.

By HARRIETT FARNSWORTH

A DOLPH NEVARES, a soft-spoken gentleman in his eighties, is a Death Valley legend.

From the solitude of Cow-Creek Ranch, his little oasis in the Funeral Range, Dolph watched the Valley go through boom and bust and boom again, saw its rugged characters come and go—some making their fortunes, others passing into oblivion.

Dolph was born of Basque parentage in San Bernardino, California, with a touch of adventure in his blood. He liked the desert country, and his first trek took him to Daggett in 1897, where he went to work for the Borax Company as driver and handyman. Dolph enjoyed his job, his fellow workers, and rip-roaring little Daggett—then a busy shipping point. "Death Valley, of course, I had heard of. At that time it was a land to be shunned," he said with a shrug. "And I gave it not a second thought until a sizzling day in August of 1900.

"Word came to Daggett that Jimmy Dayton, who had started out from the old Greenland Ranch in Death Valley, was overdue. Frank Tilton offered to search for Jimmy, and asked for somebody to accompany him who could take the heat and not go panicky. I volunteered to go."

In temperatures hovering around 120 degrees, Frank and Dolph started

for Death Valley to find Jimmy Dayton (*Desert*, June '58). One lead after another proved false, until they stumbled onto Jimmy's team, dead in the harness that held them to the light spring wagon, as were the two extra horses tied behind it. But where was Jimmy? Finally, Frank and Dolph noticed a mere skeleton of a little dog running back and forth, whining, always in the same direction.

"That's Jimmy's dog," said Tilton.

"We'd better follow it," suggested Dolph.

The little dog that had survived without food and water for several days in Death Valley's terrific summer heat, proved a good guide. Six hundred yards north of the old Eagle Borax works site, they found Jimmy Dayton crouched in the scant shade of a creosote bush—dead. Many dates have been given for this discovery, but Dolph is emphatic: it was August 14, 1900.

"The trip was rough," said Dolph. "But to dig a grave in that rocky sun-baked soil was a slow tedious job. After Tilton said a simple graveside service, we laid Jimmy to rest. As far as I was concerned that was the last of Death Valley for me, and it might have been had we not returned to the old Greenland Ranch to rest up before starting the long hot trek back to Daggett."

While recuperating for the return trip, Borax Smith sent word that he would like Dolph to stay on as overseer in Jimmy's place at Greenland

Dolph Nevares at one of the hot springs on his Death Valley ranch.



Ranch (today Furnace Creek Ranch).

"This was a situation not to be taken lightly," said Dolph. "Greenland Ranch consisted of nothing more than a big adobe house, a barn, corral and alfalfa fields which produced feed for the company's dray mules and cattle. No other sign of civilization as far as eye could see—only shimmering alkali flats, glowering mountains and desolation. No excitement in prospect except the once-a-month mail stage or an occasional visit from Borax Smith who unexpectedly dropped in on his camps to keep in personal touch with his men."

Dinner for Borax Smith

Dolph accepted the job. Even before he had time to order new supplies, he heard horses galloping down the old Randsburg Road one hot summer evening. When the rig stopped at the Ranch door, Borax Smith and his partner, Ryan, stepped out. "We're hungrier'n coyotes, Dolph!" boomed Smith. "Rustle up some grub, quick!"

Dolph was panic stricken. Smith, then in his sixties—dark, athletic of build—was considered a good scout by his men, even though he had amassed a fortune. Dolph didn't know this, and he stood staring at his boss. Serve a millionaire grub? Why he had nothing to cook! Not even a table to serve it on!

"I was at wit's end," said Dolph, his black eyes twinkling, "but, I told them I'd do my best. In time I rustled up my old stand-by, pork-and-beans and some canned meat, and with apologies seated my distinguished guests around an upturned feed box."

"No apologies! No apologies, Dolph!" roared Smith. "This is the best grub I ever ate!"

"Perhaps it was, that day," Dolph reminisced. "Smith and Ryan had been out scouting the Lila-C—the big borax strike that proved rich enough to bring in the Tonopah & Tidewater Railroad — and boom went Death Valley!"

Dolph served the Greenland Ranch well for the next two years. Then Smith sent him out on the desert as a prospector—new borax deposits had to be found, and what adventuresome young fellow wouldn't keep his eye cocked for a few good gold claims of his own?

By now isolation and the Valley's terrific summer heat held no terror for Dolph Nevares. Besides, things were beginning to happen around him. In 1900, the cry of "gold, gold, gold" rang out across the Valley with discovery of the Confidence Mines. Within seven miles of it, Yeomen and his partner, Barbour, located the fabulous

Last Chance, whose gold turned up in great varnished kidney-shaped chunks—a single bucketful estimated at \$80,000!

Dolph smiled. "I was saving my money — because there wasn't any place to spend it, nor did I have time to strike out on my own, not even when Rhyolite went boom right under my nose. But, after eight years on Borax Smith's payroll, I quit him and went looking for land I could settle on."

In wandering along the foothills of the Funeral Mountains, Dolph often stopped to rest and chat with a fellow named Watkins, who was squatting on the rocky sun-baked hillside known as Cow-Creek Ranch. Watkins lived in a wickiup built of arrowbush, and owned little else besides a two-horse team and light wagon. He liked Cow-Creek Ranch because of its 110-degree hot water pools bubbling up at the old Indian campsite farther up the hill.

When Watkins died suddenly, leaving the land unclaimed, Dolph lost no time. From the state he bought the 320 rocky hillside acres as Patented Land. When the cry of "gold" rang out within shouting distance of Cow-Creek, Dolph hurried away to get in on the excitement. His new ranch would have to wait.

Finley from Colorado and his partner Lee, a Kentuckian, had struck it rich in the Funeral Mountains only 12 miles east of Dolph's place! A fair road led into the Hayseed Mine from Beatty, Nevada, but a trail was badly needed over the Funerals into Death Valley, and Dolph built it.

"Alone, I hacked, picked and shoveled out that trail in record time," recalled Dolph. Today it leads to the almost forgotten old Hayseed Mine, later called Lee Camp.

Boom at Hayseed

"People poured into the Hayseed. Buildings went up overnight—stores, homes, shacks, tents, a big hotel, a five-stamp mill, a postoffice that served a thousand population. But, the profitable stringers played out and in three years the people were gone, and the camp was left for wind, sun and vandals to wreak their havoc."

Time went trickling on. New boom towns kept coming and going. Dolph and his partner, Dick Ryan, had collected some promising gold claims of their own.

"The four Christmas Mines were the best," said Dolph.

"They brought us \$12,000 through a promoter named Brevis. But, my richest strike was made in 1910 just

north of Cow-Creek. It required six parallel claims to cover it safely. I called it the Conglomerate. It was my favorite because it was so full of surprises. Nowhere else, except by drilling in Africa, had anyone discovered a claim so flush with low-grade quartz."

Dolph picked and hacked at the Conglomerate almost steadily for two years, and the need for a cabin at nearby Cow-Creek was becoming increasingly evident.

"Lumber was my problem," he said with a shrug. "Lumber was scarcer in Death Valley than ice in July. I had no time to drive outside to get it. Deserted mining camps had been picked clean. One day I hiked up to the old Lee Camp. Several wind-blown buildings remained, and I bought enough lumber for \$500 from the owners to build a two-room cabin—and considered it a bargain."

Feud with the Indians

What more could a desert rat ask for? A cabin a thousand feet above the Valley floor, hot water pools, freedom and contentment. "Well," Dolph laughed wryly, "maybe not always contentment. Every time the Indians came to bathe, they'd fill the pools with rocks. I'd tote 'em away, and they brought 'em back. This went on until I took advantage of the Indians' lazy streak. One day I took the rocks so far away my visitors lost interest in binging 'em back—and we lived in peace."

Hot water on the hill meant city conveniences in the cabin. In time, hand-dug ditches circled several acres around the cabin, and hot water ran from the kitchen faucet.

Plant life indigenous to the Valley moved in. Dolph, encouraging Nature, planted palms, cottonwoods and athels that thrived in neighborly confusion with arrowbush, tules, desert holly and mesquite trees—a cool inviting oasis encircling his two-room cabin.

Wildlife moved in: cottontails, kit foxes, packrats, chipmunks, badgers, coyotes, birds by the hundreds and often wild burros. It was not unusual for bighorn sheep to graze at a seep southeast of the cabin — in spite of Indians waiting behind rock-walled blinds to get their meat ration.

Dolph cleared a space west of the cabin and circled the plot with irrigation ditches. Here he planted apricot and fig trees, and a small vineyard. Next spring his garden produced onions, beans, peppers and watermelons.

The garden thrived. So did the

rabbits. The melons grew large and luscious. Dolph seldom got one, for the coyotes loved them. In time, fruit trees bore abundantly, grape vines produced delectable fruits. Dolph got some. So did the birds. Content with life at his enchanting oasis in the Funerals, Dolph weeded and hoed his garden while changes were taking place in the Valley.

This area was becoming popular as a winter resort, and visitors straggled up the rugged hogback to Cow-Creek. Each winter more came. They loved it. Some came for a day's picnic, others for extended camp-outs — delighting in the hot water pools, the memorable shadow-patterns shifting over the formidable Valley below.

"One day I looked around wondering where time had gone—60 years of it!" Dolph sighed. "I slacked up on prospecting. Decided to keep up assessment work on only a few good claims. But this sort of left me at loose ends. When I was offered a job at Monument Headquarters as gardener, I took it."

Dolph Retires

With the exceptions of weekends spent at his cabin, Dolph stayed on the new job for 10 years. Still active, and tough as a pine knot, he retired and went up to the cabin to watch the world go by. However, other interests had their eyes on his charming oasis.

More water was needed for the Valley hotels. Cow-Creek Ranch, the only privately owned ranch in the Monument, was a likely source. Several years passed in negotiations, then Dolph sold out and left Death Valley.

When I recently visited my old friend in his neat little cottage in San Bernardino, he still was chipper, still blessed with his rare sense of humor and good memory.

"What's become of the old Conglomerate?" I asked. A sad little smile crept over Dolph's happy face, a tone of longing tinged his voice:

"Oh, I still hang onto my favorite. That hole still makes me feel like a millionaire — although somebody else will take out its gold. Yes, often I get mighty homesick for Death Valley. Wish I had time to relive every day of it."

Cow-Creek Ranch will live in memory as a monument to one man's infallible faith in himself; a faith that flourished and strengthened while facing obstacles that would have broken weaker spirits. "This faith," said Dolph, "was always nourished by my unflinching confidence that I would live to see Death Valley pay off in more than gold—and it did."

World Will Revert to Stone Age Says Scientist from Cal-Tech

The world is rapidly approaching the day when mineral deposits will be exhausted and the metal industries will have to derive their raw materials from common rocks. This was the prediction of Dr. James Bonner at the annual meeting of the Desert Protective Council in the Desert Magazine pueblo at Palm Desert in October.

Dr. Bonner is professor of biochemistry at the California Institute of Technology, and co-author of the book *The Next Hundred Years*.

Nature lovers are justified in asking that wildlife and recreational areas be reserved in their natural state, and even if some mineral resources are included in such areas, it will make little difference in the long span of time. Eventually it will be necessary to derive all the world's minerals from common rock, and the reservation of limited areas for recreational use will not greatly hasten the day when the iron, copper, lead and other minerals required by an industrial civilization must be taken from deposits of such low grade that today they are regarded as common rocks.

"It is good for people to have wild areas as a place of retreat from the pressures of a highly complex commercial and social life," Dr. Bonner said. "Let's learn to do without the present high grade resources a little faster so we may reserve at least a small portion of the earth's surface in its virgin state. Our children will thank us for doing so."

Dr. Bonner said the fossil fuels, coal and petroleum, will be nearing exhaustion in the next 50 years, but by that time the harnessing of nuclear energy will have reached the stage when we will have an ample power supply.

Dr. Horace Parker of Balboa Island, California, and author of the Anza-Borrego Desert State Park guide book, was elected president of the Desert Protective Council for the coming year. He succeeds Col. James Westfield, who was re-elected to the board of directors and will serve as vice president in the year ahead. Other directors re-elected were Nina Paul Shumway, Dr. Ernest Tinkham and Dr. C. E. Smith.

Harry C. James, executive director of the Council, gave a detailed report regarding the availability of public land for recreational purposes, based on information given him by the Federal Bureau of Land Management in Los Angeles.

Title 43 of the Public Lands law

permits any state, territory or political subdivision, including counties and municipalities, and also non-profit corporations and associations to acquire up to 640 acres of the public domain in any one year for public or recreational purposes. Federal officials in the Los Angeles Land Office expressed disappointment that Southern California towns and counties have not taken advantage of this law to secure public land for recreational use. There would be a nominal charge for such lands, but it would be only a fraction of their appraised value.

The Council passed a resolution urging that no decision be made as to protective works for Rainbow Bridge National Monument until Glen Canyon Dam is completed, the new reservoir filled, and an on-the-ground appraisal made of the need for such protective works. It has been the attitude of the Council that protective dams and a pumping plant such as would be necessary to prevent water from the reservoir backing up under the Bridge would be more destructive of the scenic values in the Bridge area than would the estuary which during limited periods would fill the Bridge Creek channel beneath the great arch.

THE *Desert* MAGAZINE CLOSE-UPS

Twenty-five years ago, Harriett Farnsworth of Palm Springs, California, came out from Atlanta, Georgia, to take a look at the desert.

"Its wide open space spelled peace and contentment, its interesting old timers became my friends," writes the author of "Dolph Nevares of Death Valley" in this month's magazine. "I followed them into the back country, lived their rugged life and loved it. Three months spent in a cave, where I went to study and photograph wildlife, was an adventure of which I had long dreamed. The winter I spent alone in Dolph Nevares' cabin in Death Valley stands out as a highlight of my desert wanderings."

Her desert articles have appeared in 20 publications. "To sum it up," she concludes, "I'm a dyed-in-the-sand desert rat . . ."

A Sing For Atsa Gai

BY JOE KERLEY

The Navajo, a man of many friends, lay dying. For this sing they would employ powerful medicine—even six-shooters—to drive away the evil spirits.

couldn't see how incantations, chants, sand paintings and herb tea could cure a desperately ill person.

Still, if there was the remotest chance that a sing would benefit Atsa Gai—even spiritually—I couldn't refuse to help.

I told Claw that I would give flour, sugar, coffee, cookies and candy. And at the last minute added, "And I'll give the medicine man a blanket."

Claw Begony nodded in satisfaction. "I go to Tees Toh," he said.

The news spread quickly over the desert grapevine, and the Navajos began to assemble. Atsa Gai was well liked, and because of his long illness this would be a dramatic sing. It also would be a great challenge to the medicine man of Tees Toh. Few Navajos in the area would want to miss it.

I had known Atsa Gai for several years. He was one of my first visitors when I took over the lonely trading post at Kayenta, Arizona, and I had liked him at first sight.

Tall, handsome and straight as a young tree, he was more of an extrovert than other Navajos I had known. His was an outgoing friendly big-hearted nature. He loved to laugh, especially at himself.

Perhaps that was why he was a successful gambler. Losing didn't worry him. Gambling was fun, not a life-and-death matter. If he won, he won. If he lost—he'd try again later.

He was considered wealthy. He had good horses, much silver and turquoise, and a pretty wife who was an expert weaver. But in the midst of his prosperity, trouble, in the form of a leg malady, crept in.

One day he limped into the store, his handsome face drawn with pain.

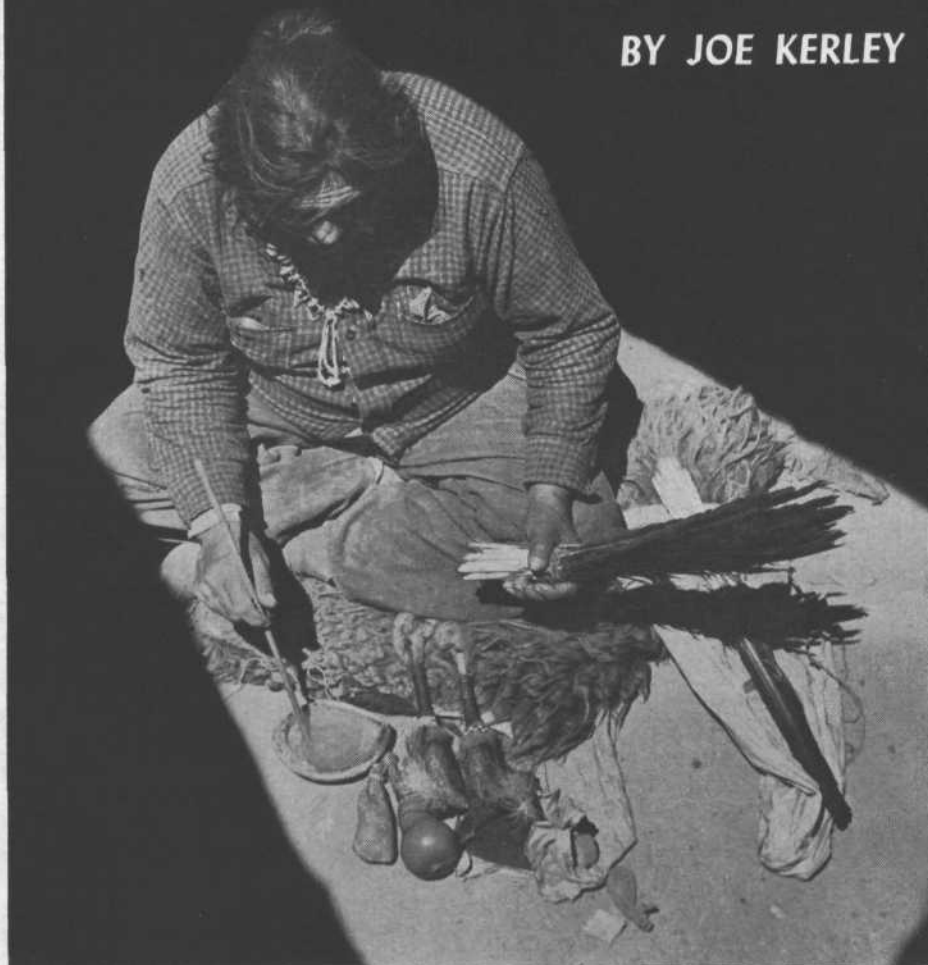
"How'd you hurt your leg?" I asked.

"I didn't hurt it," he laughed. "It hurt me. I wish it would stop hurting me."

But it grew worse. Before long he no longer could stand the pain of riding in the saddle, and when we brought him home from Tuba City to die, he was a skeleton of his former self.

I went to see him the morning before the sing, and at first glance thought he was already dead. When I saw the faint lift of his ribs, I knelt beside him and spoke.

Once he opened his eyes, but they



Medicine man prepares for a sing.

7 SPOKE TO Claw Begony, the thin-faced long-haired Navajo, as he entered the trading post, but he merely grunted, stopping just inside the doorway to stand with lowered head and downcast gaze.

I went on with my work. He would tell me what was troubling him when he was good and ready; not before.

Presently he came to the counter and extended his hand. I placed mine in it, and he held it an instant, not shaking it, then let his hand slide away.

"I've come to talk to you about our friend, Atsa Gai," he said, his usually soft voice harsh with grieving. "He's *da-a-tsa*. *Yah-go da-a-tsa!* Very near to death."

He was visibly moved. White Eagle, the laughing gambling life-loving young Atsa Gai, was failing rapidly. But what more could be done for him?

A sing had been held for Atsa Gai before I persuaded him to go to the Indian hospital in Tuba City for treat-

ment. He had been sent home from there, his case pronounced incurable.

"We've done all we can," I reminded Claw gently.

He shook his head.

"No sickness can stand against the right medicine," he said solemnly. "I have visited a man at Tees Toh. He knows about Atsa Gai's sickness. He says his medicine is so powerful it can suck the evil spirits from Atsa Gai's body, right up the smoke hole of the hogan. But he is very old now and he needs help. He has trained two young singers in his own way . . . He will cost us a lot of money."

Claw wanted me to help, and he wouldn't ask me directly. I had attended healing sings, and considered them pure superstition. Sure, it gave the Navajos a chance to get together, gamble and trade, and probably they were sincere in their belief; but I

were blank. He seemed very far away. I went back to the trading post in sorrow.

Claw Begony came again that afternoon.

"To chase evil spirits away for good," he said, looking at the rifles and six-shooters on the pawn rack, "medicine man says he'll need guns and ammunition."

"What are you going to do with them?" I asked, startled.

He ignored the question.

"When you hear the singers tonight, it will be time for you to come," he said.

"Okay," I said. "I'll lend you the guns and give you ammunition. Just don't kill anyone."

There were 40 singers—young men with leather lungs. Their weird chanting sent gooseflesh over me as Claw escorted me into Atsa Gai's hogan that night.

The dwelling was not more than 14 feet wide, with mud plastered over juniper logs. It had a smoke hole near the center of the domed roof, but with a heavy rug hung over the doorway, there wasn't a breath of air in the crowded little room.

Atsa Gai lay on a sheep pelt near the north wall, through which his body would be taken should he die. Strands of his loosened long black hair lay across his bare chest, and his eyes were closed. He was pale, as though the medicine man had sprinkled him with sacred pollen.

Against the south wall a group of men were busily tearing a bolt of cloth into small pieces and tying candy, cookies, cigarettes, gum and other gifts into the squares. Claw and several other men sat near the door, each of them armed with the borrowed firearms.

The medicine man sat beside the clear-burning juniper fire built just below the smoke hole. His young helpers watched him intently as he measured out various herbs from buckskin pouches, and placed them, with chants and incantations, into a white porcelain cooking pot steaming over the fire.

He was very old and withdrawn, apparently unaware of anything except his own movements.

After the last ingredient was added to the sacred brew, there was a shaking of gourd rattles, a swishing of eagle feathers, a low intense chanting. Then the pot was removed from the fire.

While the brew cooled, the medicine man and his assistants meditated, heads bent. The calico bags were stacked in a little pile. The singers outside chanted the sacred songs. We sat in silence waiting.

As if at a signal, though I saw none, one of the assistants went to Atsa Gai, lifting the inert figure to a sitting position. The medicine man followed, carrying the pot of brew.

Suddenly, there was a surge of expectancy, an electrical tingle in the room. All eyes were on the medicine man. Something was about to happen.

Slowly he pressed the rim of the

porcelain pot to Atsa Gai's lips. The liquid dribbled down the sick man's chin and chest. I could scarcely breathe.

"Drink!" I begged silently. "Drink!"

Atsa Gai's body seemed to stiffen a little. In the stillness we could hear him suck in some of the medicine. He stopped, panting audibly, before making a feeble motion to take the pot in his hands. Then he drank. Noisily. Greedily.

Outside, the chanting rose in volume until the sound—primitive, compelling—was all but unbearable. And as Atsa Gai swallowed the last of the brew, Claw Begony and his companions began firing through the smoke hole, while the men with the bags of goodies tossed them after the bullets.

This was the test. The crucial moment.

I leaned forward, tears streaming down my cheeks, my eyes on Atsa Gai's face.

Then he opened his eyes. He looked up and recognizing me, he smiled.

"It worked!" I exulted. "He's healed!"

Afterward, walking home in the cold early morning air, I marveled at my emotion. But, in spite of myself, I believed he was healed.

Atsa Gai came to see me a few weeks later. He was still gaunt and pale, and he still limped, but he was evidently well on the way back to health. I couldn't resist invading his privacy of thought.

"Gambler," I asked, "did you really believe you'd be healed?"

There was no mirth in his eyes when they met mine.

"The medicine man told me the evil spirits would be sucked up through the smoke hole when I drank the medicine, and he said the bullets would chase them away forever . . . I believed, and it was so," he replied.

Hard Rock Shorty of Death Valley



"Yep, they's a lotta mineral springs over in the Amargosa country," Hard Rock Shorty was explaining to the crowd of tourists on the leanto porch at Inferno store.

"There's that alum spring up Eight Ball Crick. Then over in the badlands is the soda springs. An' there's salt springs and magnesium springs an' a lotta others. But the one yu want to keep away from is that magnetic spring up near Pisgah Bill's iron mine. That water has so much pull it'll jerk the tin can right outta your hand when yu try to dip up a drink.

"Ol' Pisgah usta git a lot o'

meat off that little pond below the spring. Ducks 'd fly in there to spend the night when they wuz headin' south in the fall. When one o' them birds had a band on his leg, like them bird migration fellers put on 'em up north every season, the duck couldn't take off again. Too much magnetism in the water.

"Bill had duck meat all one winter, but he finally had to give it up. Ate so much o' that magnetized bird meat his stomach got magnetic. Swallowed his knife one day an' if there hadn't been a doctor over at the Consolidated Mine Bill woulda strangled to death."

PHOTO CONTEST

You are invited to enter desert-subject photographs (black and white, 5x7 or larger) in Desert's monthly photo contest.

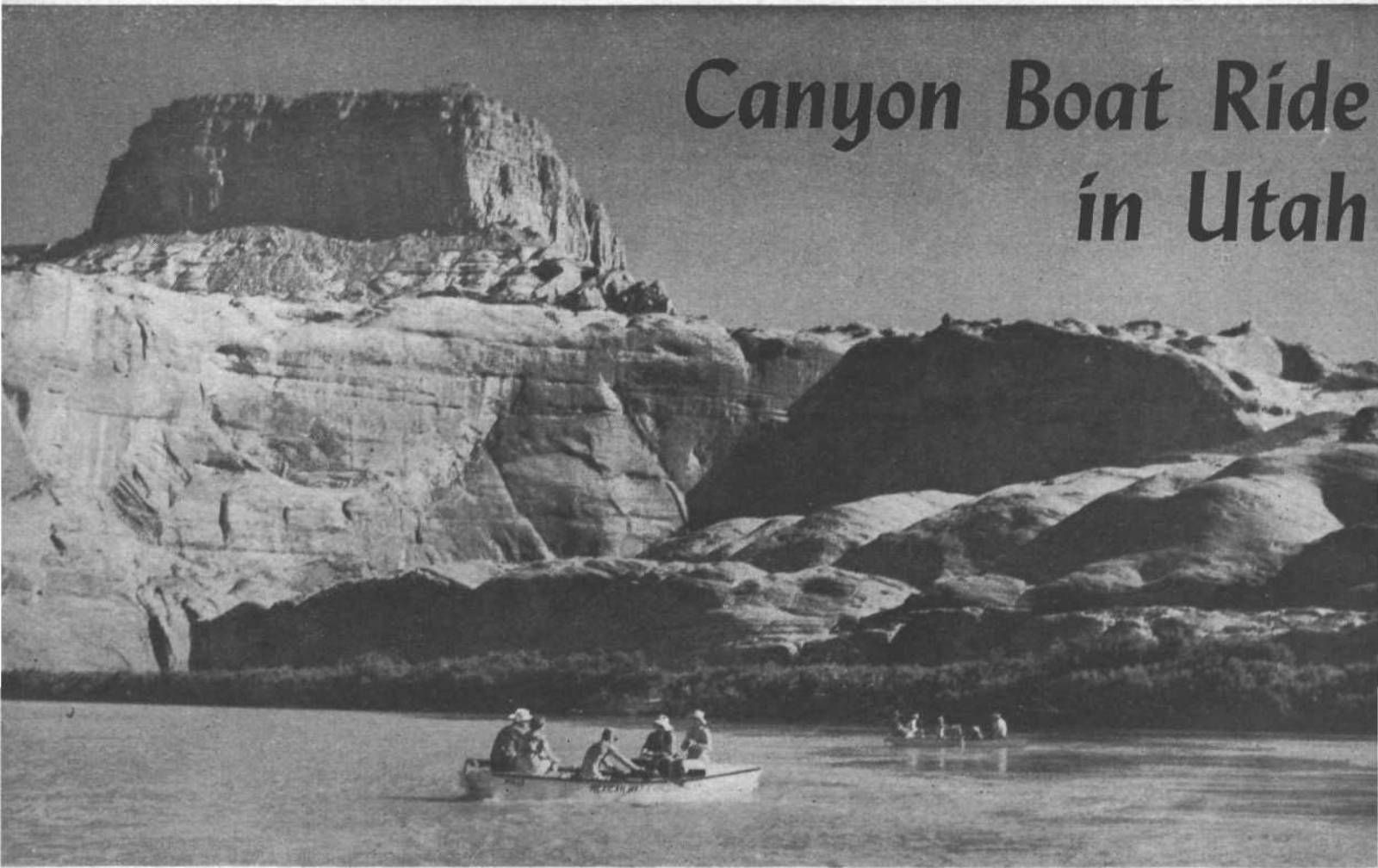
One entry will be selected each month, and a \$10 cash prize awarded to the photographer. All other entries will be returned—provided postage is enclosed.

For non-winning pictures accepted for publication, \$3 each will be paid. The contest is open to all, and time and place of photograph are immaterial—except that the photo must be of a Desert Southwest subject.

Address all entries to:

PHOTO CONTEST
DESERT MAGAZINE
PALM DESERT, CALIFORNIA

Canyon Boat Ride in Utah



By RANDALL HENDERSON
Map by Norton Allen

IN THE GREAT chasm which the Colorado River has slashed through the southern Utah and northern Arizona plateau, workmen are drilling and blasting the sidewalls in preparation for the construction of Glen Canyon dam. Within a few years the new reservoir to be created will have backed 187 miles upstream behind the dam and inundated some of the most colorful and fantastic terrain in the West.

I have wanted to make one more trip into the gorgeous tributary canyons of that region before they are submerged, and I welcomed the invitation of Gaylord Staveley of the Mexican Hat River Expeditions to become a member of one of his San Juan-Glen Canyon boat parties. We made the trip last June.

Our party of 22—17 passengers and five boatmen—left Bluff, Utah, in five boats the morning of June 19. I knew these boats well, they are of plywood and fiber-glass construction, designed originally by Norman Nevills for the San Juan river runs which he inaugurated in the late 1930s. Following the

Within a few months rising water behind a cofferdam in Glen Canyon of the Colorado River will begin the transformation of a scenic area of millions of acres in southern Utah. Some lovely canyons will be inundated, but numberless new scenic vistas will be made accessible around the 400-mile shoreline of a new reservoir.

death of Norman and Doris Nevills in an airplane crash in 1949 the equipment was taken over by Frank Wright. Wright added new boats, the ones in use today, but of the Nevills pattern. A year ago Gaylord Staveley bought the equipment from Wright and continues to operate as Mexican Hat Expeditions. Gay's active associate in the river enterprise is his wife Joan, daughter of Norman and Doris Nevills. Joan plans the commissary for the river trips, as did her mother many years ago for her father.

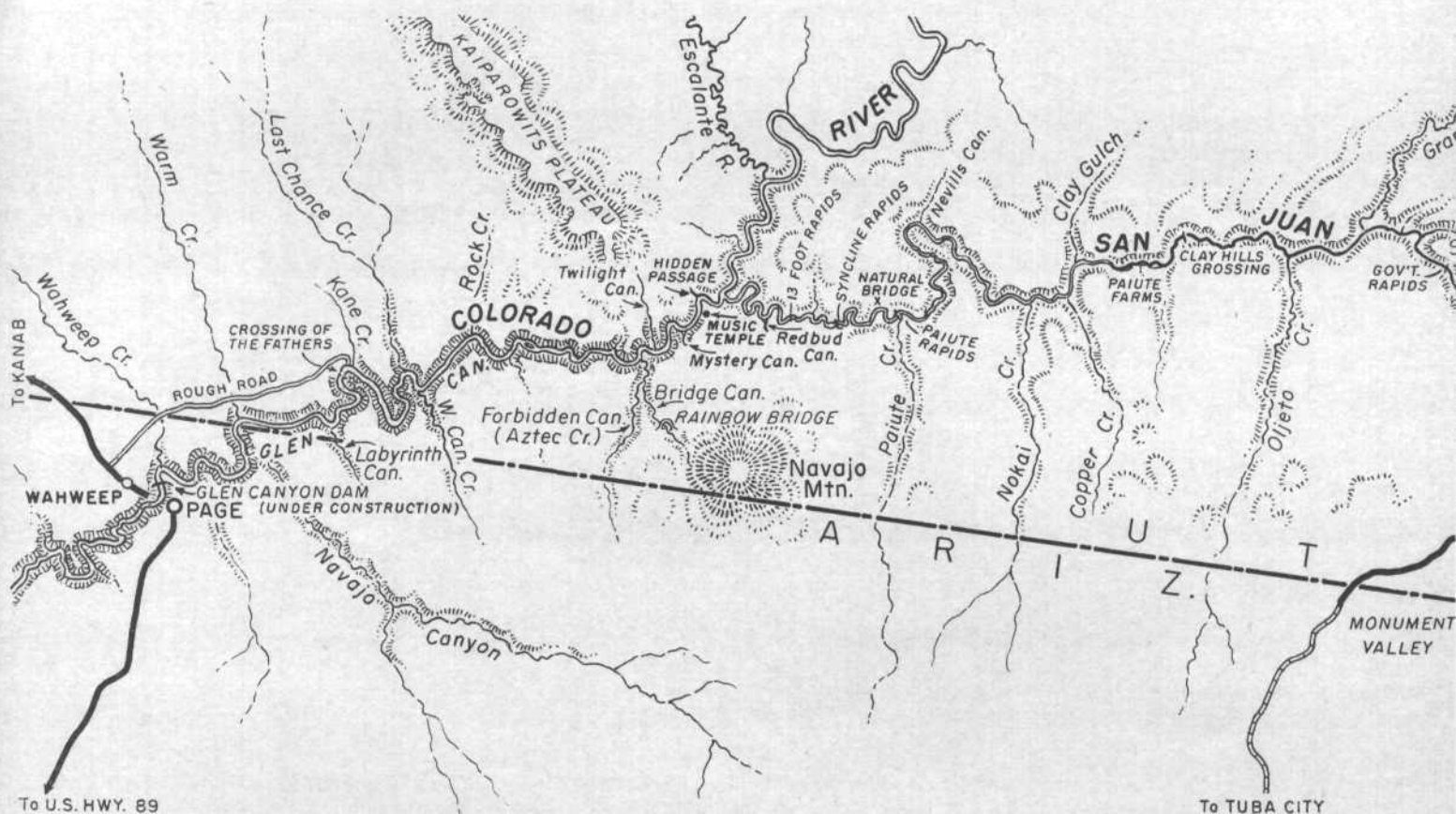
Below Bluff the San Juan flows between high sidewalls for many miles and occasionally Indian petroglyphs are seen on the rocks. The current is fast, but the few mild riffles cause no boating problems.

At 21 miles from the start Gay

pulled ashore where we made camp on a sandbar. The skipper and his young boatmen gathered firewood and cooked an appetizing dinner while the rest of us spread our bedrolls among the willows and salt cedars in accordance with the traditional pattern of the river runners, women upstream, men downstream.

Next morning it was only a 12-mile run to Mexican Hat where we stopped to load additional provisions for the 8-day journey ahead. The hydrographer at the U.S.G.S. gauging station at Mexican Hat told us the river discharge was 5500 second feet—a rather low river but ample for our voyage.

In the afternoon run below Mexican Hat we followed the winding course of the famous Goosenecks, where the river in a series of graceful curves doubles back on itself like a sidewinder in motion. Here we encountered sand waves three and four feet high. The sandwaves come and go in midstream, piling up in a parallel series of huge rollers. They are quite harmless, and passengers generally get a thrill in riding them. Hitting them bow or stern foremost is a sort of slow-motion bucking pony experience. Broadside, they are a rubber-cushioned roller-



coaster. Occasionally they break wrong and spray the passengers, but wet clothes are no hardship when the temperature is in the 90s.

We camped the second night 18 miles below Mexican Hat, and early the third morning came to the first of the four rapids in the lower San Juan. This is Government Rapids, so named because a couple of boats manned by a U.S. Survey party are reported to have cracked up here many years ago. At a stream flow of 5500 feet they are mild, and the skipper headed into them without stopping for the usual palaver with the boatmen.

Fossil Beds

Later in the morning we stopped to examine fossil deposits in a sidewall near the river. According to Bill Thompson, the paleontologist of our party, these stony clams and corals are the fossilized remains of marine life of at least 250,000 years ago.

A few miles downstream where the Slick Horn tributary enters the San Juan we could see on the shore line traces of the oil seeps which in the past brought oil drillers into this area. They were never successful in reaching a producing well.

Today we ran 28 miles in a lovely canyon sector where the sidewalls are 1500 feet high, and when we pulled ashore for night camp at 5:30 a canyon wren somewhere up in the cliffs gave us a serenade.

On the fourth day we passed the old

Clay Hills crossing where shallow water and low banks made it possible for early day explorers to ford the river. Then we arrived at Paiute Farms where the channel spreads out between low hills forming a valley where until recent years wild tribesmen were planting maize and squash. The river here runs shallow over a sandy bar, and except in high water the boat crew and passengers generally have to wade and drag the boats. Despite the low stage of the water, however, Gay Staveley, piloting the lead boat, found a channel we could follow most of the way. We were almost through the shallows when the boat grounded and a few minutes of wading in ankle-deep water soon put us over the bar. We ran 31 miles today.

Early in the morning of the fifth day we reached the head of Paiute rapids. Although Paiute is one of the major rapids in the lower San Juan, it is not comparable to the rapids of Grand Canyon.

Geological Study

In camp at the head of the rapids were Maurice Cooley, geologist, who with Bob McGregor as assistant were making a geological survey of the area for the Museum of Northern Arizona. The Museum has a contract with the federal government to map and study the geology of the entire basin to be submerged later by the water behind Glen Canyon dam. Frank Wright was with the geologists as boatman for

their survey. He told me the new Glen Canyon reservoir will back up in the San Juan channel as far as Grand Gulch, shown on the accompanying map.

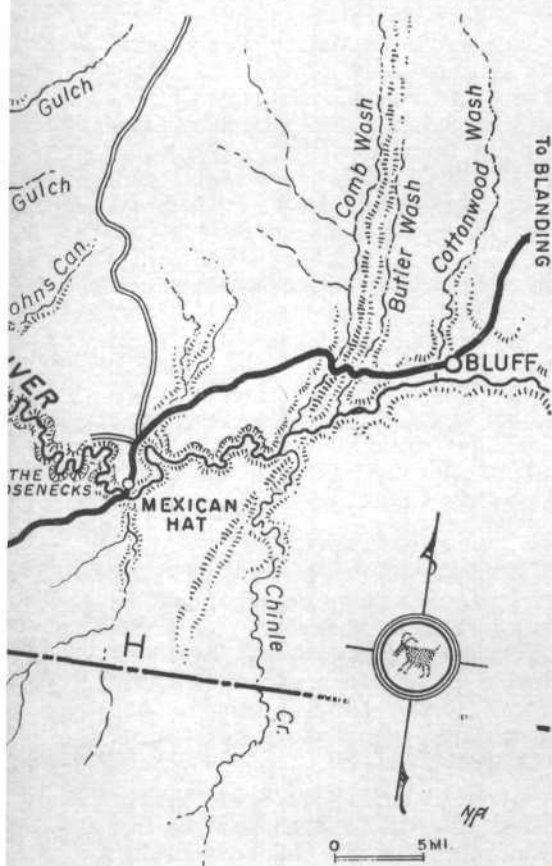
Paiute Rapid is a long rocky chute, but it would have been a laborious task to have portaged our gear along the boulder-strewn shoreline, and the skipper decided to run it with full loads. We bumped along over the rocks in many places but the power of the current carried us through, and without damage.

Treacherous Rapids

An hour later we ran Syncline Rapid without difficulty, and stopped for lunch at the head of 13-Foot Rapids where the river loses that much elevation in a quarter of a mile. The rapids looked treacherous and after the boatmen had studied the water as it cascaded over and around great obstructing boulders, it was decided the passengers should walk the shoreline while the oarsmen took the boats through. The run was made without accident.

At six in the evening we pulled in at the entrance to Redbud tributary canyon, a delightful camp with Nature's swimming pools and waterfalls in the background. We ran 21 miles today.

From Redbud tributary it was only an 8-mile run the next morning to the confluence of the San Juan with the Colorado. By 9:30 we had drifted out into the broad expanse of the Glen



Canyon sector of the Rio Colorado. I use the term "drifted" because that is the manner of travel on most of the San Juan and Glen Canyon expeditions. Very little rowing is done. The current carries the boats along at from six to 10 miles an hour—and who would want to go faster in a setting of such majestic beauty?

Side Canyons

Immediately downstream from where the San Juan enters the Colorado are some of the most fantastic and colorful side canyons to be found in all the mountainous regions of the West.

First there is Hidden Passage where the boats are moored at the base of a vertical sandstone wall, and the passengers discover a narrow passage in the cliff where they may enter and follow a tiny stream far back into the heart of a great domed massif. Sometimes it is necessary to wade, and this summer even to swim to reach the little waterfall which terminates the winding slot. Maidenhair ferns grow in soft strata in the walls where water seeps out. It is always cool and restful in this narrow corridor.

Across the river and just a few miles below is Music Temple, a favorite side trip for all river voyagers, and the despair of the photographers because so little sunlight penetrates the great domed room.

Music Temple was named by Major John Wesley Powell. He camped here

August 12, 1869, and his notes contain the following record:

"On entering we find a little grove of boxelder and cottonwood trees; and, turning to the right, we find ourselves in a vast chamber carved out of rock. At the upper end there is a clear deep pool of water bordered by verdure. The chamber is more than 200 feet high, 500 feet long and 200 feet wide. Through the ceiling and on through the rocks for 1000 feet above, there is a narrow winding skylight, and this is all carved out by a little stream which runs only during the showers that fall now and then in this arid country. . . . Here we bring our camp. When 'Old Shady' (the cook) sings us a song at night, we are pleased to find that this hollow in the rock is filled with sweet sounds. It was doubtless made for an academy of music by its storm-born architect; so we named it Music Temple."

Guest Register

Frank Wright and I placed a guest register in Music Temple May 7, 1953, and when I returned this year the register's 150 pages were filled with over 4000 names. Since there was no more space for entries and its binding was showing the erosion of many thousands of hands, I wrapped it in plastic and brought it out for permanent safekeeping in the archives of Colorado River travel. Soon after Glen Canyon dam is completed Music Temple will be submerged and its beauty and delightful acoustics lost to mankind forever.

Just downstream from Music Temple is Mystery Canyon where at certain stages of the river it is possible for small boats to enter the sidewall of Glen Canyon through a narrow slot and follow a winding passageway far back into the sandstone cliff. The passage is too narrow to use oars, and passengers propel the boat by pushing on the sidewalls. The passage was silted up when we arrived there—too shallow for the boats and the quicksand too treacherous for wading. This canyon was named by Norman Nevills on one of his first trips through Glen Canyon. He found where prehistoric Indians had cut hand and toe niches leading to the top of the wall. However, time and weather had so disintegrated the sandstone as to make it impossible to ascend to the top. Norman never solved the mystery of why those steps were chiseled in the rock or their destination—but they supplied a name for the canyon.

We crossed the river again to visit Twilight Canyon, another tributary where the erosion of countless ages by cloudburst torrents carrying a high sand content has gouged out great overhanging amphitheaters at the hair-

pin bends in the gorge. This place might also have been called Echo Canyon for the sound waves from any noise are bounced back and forth among the sidewalls and clefts in a babble of echoes.

Among those who have had the privilege of visiting these and other scenic side canyons and glens along this sector of the Colorado there is a deep sense of regret that all these lovely places are to be submerged under the new man-made lake. At one time there was a growing tide of popular interest in reserving the sector of the Colorado River from the southern Utah boundary north almost to Moab as the Escalante National Monument. Charles Kelly, one of the sponsors of the idea, wrote the story for the February '41 issue of *Desert Magazine*. Later, Kelly told me that Secretary of Interior Harold Ickes favored the proposal and was planning to press for its acceptance in Washington — and then circumstances caused Ickes to resign.

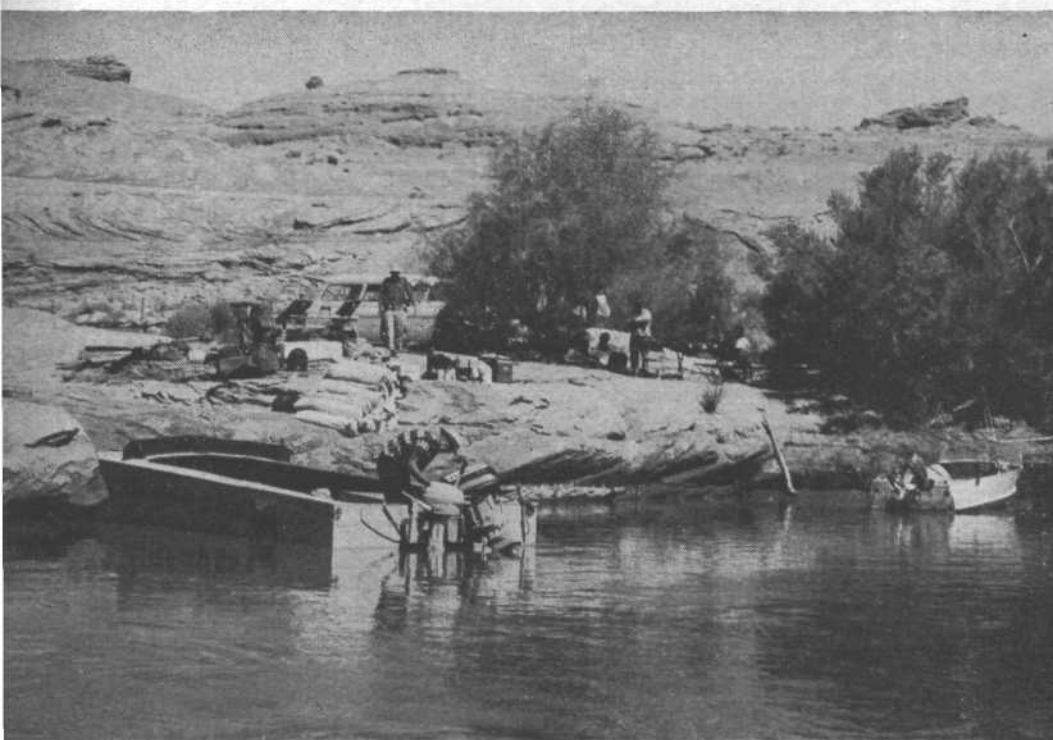
New Vistas

But while the scenic side canyons at river level will be inundated, those who are acquainted with this lovely southern Utah terrain agree that the waters of the new lake at a higher level will give access to many new vistas of rare beauty which are now inaccessible.

That night, our sixth day on the river, we camped at the mouth of Forbidden Canyon tributary. Names here are a little confusing for the stream which flows in Forbidden Canyon is

Gay Staveley, skipper of the Mexican Hat Expeditions.





Kane Creek Terminal, where San Juan and Glen Canyon boatmen leave the river because Glen Canyon damsite is closed to navigation.

Aztec Creek. This is the river approach to Rainbow Bridge National Monument. In recent years, since Rainbow Lodge burned and the original 14-mile overland trail to the Bridge was made impassable by storms, a great majority of the visitors to Rainbow have trekked in from the Colorado River, a distance of six miles according to the sign boards, but probably somewhat less than that.

All river voyagers stop at Forbidden Canyon. Two river parties were camped there when we arrived at six in the evening, one of them a troop of 33 Boy Scouts from Salt Lake City who had floated down the river on rubber rafts from Hite Ferry crossing.

A fairly good foot trail follows Aztec Creek four and one-half miles upstream to its junction with Bridge Canyon, a tributary of Forbidden Canyon, and thence one and one-half miles along the floor of Bridge Canyon to the great arch which is Rainbow Natural Bridge.

Water Under Rainbow

According to the engineers who surveyed the contour of the new reservoir shoreline, when the lake is filled a narrow finger of water would back up in Bridge Canyon immediately underneath the Bridge span.

Public Law 485 authorizing the construction of the Upper Colorado River Storage Project including Glen Canyon Dam, specifically provides "that as part of the Glen Canyon Unit the Secretary of Interior shall take

adequate protective measures to preclude impairment of the Rainbow Bridge National Monument."

Engineers for the Bureau of Reclamation have stated that they can protect the Monument area by constructing a barrier dam in Bridge Canyon below the Bridge, and a diversion dam upstream with a tunnel which will divert the storm water from above out of Bridge Canyon. A third installation would be a pumping plant at the barrier dam to dispose of storm water which might accumulate in the immediate area of the Bridge, between the two bulkhead dams.

Float in Equipment

The engineers have suggested that if this construction program is deferred until they can float the heavy equipment for construction of the two protective dams to the site on the rising water in the new reservoir they can avoid the necessity of blasting roads overland to the locale—and thus preserve as much of the wilderness aspect of that area as possible.

Conservationists are divided in their opinions as to the installation of protective works at Rainbow Bridge. The Sierra Club of California is insisting that the barrier dams be built and the Monument fully protected against any backwater from Glen Canyon Dam. The Desert Protective Council has taken the position that a backwater estuary in the creek beneath the Bridge would be less destructive to the scenic values of the area than would the pro-

posed dams, tunnel and pumping plant.

In order to forestall any hasty action which might later prove to be ill-advised, the Desert Council at its October meeting passed a resolution asking that the final decision as to protective works at Rainbow Bridge be deferred until Glen Canyon lake has been filled. At that time a realistic appraisal of the situation can be made at the Bridge site. Since the lake will be subject to wide fluctuation, protective works could be installed later if it is decided they are desired. The Bridge itself is in no danger of destruction or inundation regardless of the decision as to protective works. I am completely in accord with the attitude of the Desert Protective Council.

13,464 Visitors

Beneath the Bridge span the Park Service keeps a register, although there is no resident custodian. Since the Monument was established by President Taft in 1910 and the register placed here, 13,464 persons had signed their names as visitors when I was there June 25.

Byron Cumming and John Wetherill are believed to have been the first white men to see Rainbow Bridge. That was in August, 1909. In 1913 Theodore Roosevelt signed the register and Zane Gray and Irvin Cobb were among the first visitors. Most of the travel to Rainbow in recent years has been by way of the river.

We returned to the river late in the afternoon and after camping there that night shoved off at eight a.m. for the last lap of our journey. At 6:15 that evening we arrived at Kane Creek where a terminal camp has been established since the Glen Canyon damsite 25 miles downstream was closed to river boats. From this point a rough road has been bulldozed to connect with the paved Kanab-to-damsite highway near the little trailer camp of Wahweap. At Wahweap Art Greene has provided cabin lodging with a mess hall for travelers. Art's daughter Grace, and her husband Mel Schopman, provide much better accommodations than normally would be expected in a boom construction camp.

Archeological Survey

Here I met an old friend, Dr. Jesse Jennings, head of the department of Anthropology at the University of Utah. He and his associates are making an archeological survey of the region to be inundated by the new Glen Canyon Lake, and taking out any artifacts which can be removed.

At Kane Creek landing I also met Dr. Gregory Crampton professor of history at the university who with associates is making a historical survey

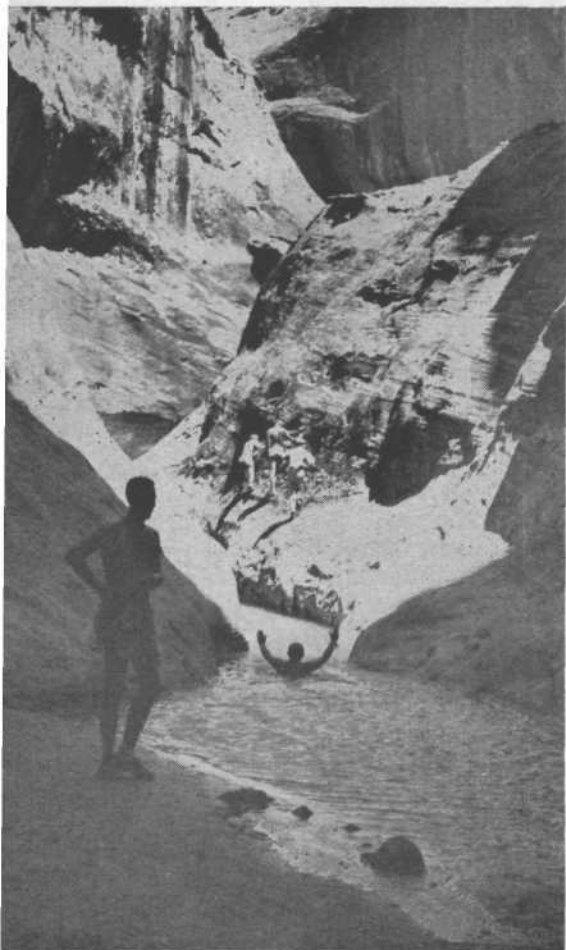
of the Glen Canyon area to be submerged later.

At Dr. Crampton's suggestion, and with the approval of Frank Wright, I forwarded the register which I had brought from Music Temple to the Utah Historical Society in Salt Lake for the permanent archives of the Society. David E. Müller, also of the department of history at the university, arrived while I was there. Dr. Müller is writing a book on the Hole-in-the-Rock trek made by a colony of Mormons in 1879-80, one of the most amazing episodes in the Utah history of the Church of Latter Day Saints (*Desert*, May '47).

Boating on the fast water rivers of the West with passengers involves considerable responsibility on the part of the leader, not only from the standpoint of safety, but also for adequate commissary and pleasurable travel. Gay Staveley, although he has had previous experience as a boatman on the San Juan and Colorado, was serving his first season as skipper of river expeditions, and I was interested in the background of this young man who had chosen river-running as a vocation.

Born in Traer, Iowa, he was a stu-

Hidden Passage, one of the many scenic tributaries along the Glen Canyon sector of the Colorado River.



dent at the University of Iowa for three years, and then a year at the University of Colorado where he majored in psychology.

In 1951 on a motor trip from the Royal Gorge of Colorado to Grand Canyon, he took a wrong road, and stopped at Mexican Hat for information. At the Mexican Hat lodge he met Joan and Sandra Nevills who, after the tragic death of their parents, were living with their grandmother, Mae Nevills.

PERSONNEL

Following is the passenger list and crew on the expedition described in the accompanying story:

In the boat *Music Temple*:

Gay Staveley, Mexican Hat, Utah, Leader.

Mary Beckwith, Van Nuys, Calif.

Capt. John Granicher, San Francisco.

Joe L. Dudziak, Richmond, Calif.

Randall Henderson, Palm Desert, Calif.

In the *Piute*:

Earl Weimer, Grand Junction, Col., boatman.

Mickey and Georganne Garms, Antioch, Calif.

Pat McCormick, Chicago, Ill.

In the *Thlo-be-nah*:

Kent Holst, Traer, Iowa, boatman.

Bob and Gladys Stoer, La Crescenta, Calif.

Trude and Marion Misley, Santa Clara, Calif.

In the *Petroglyph*:

Howard Hurst, Blanding, Utah, boatman.

Helen Williamson, Colorado Springs, Col.

Lucy Arnold, Tucson.

Dr. William Kuhlman, Colorado Springs, Col.

In the *Moonlight*:

Gordon Lyman, Blanding, Utah, boatman.

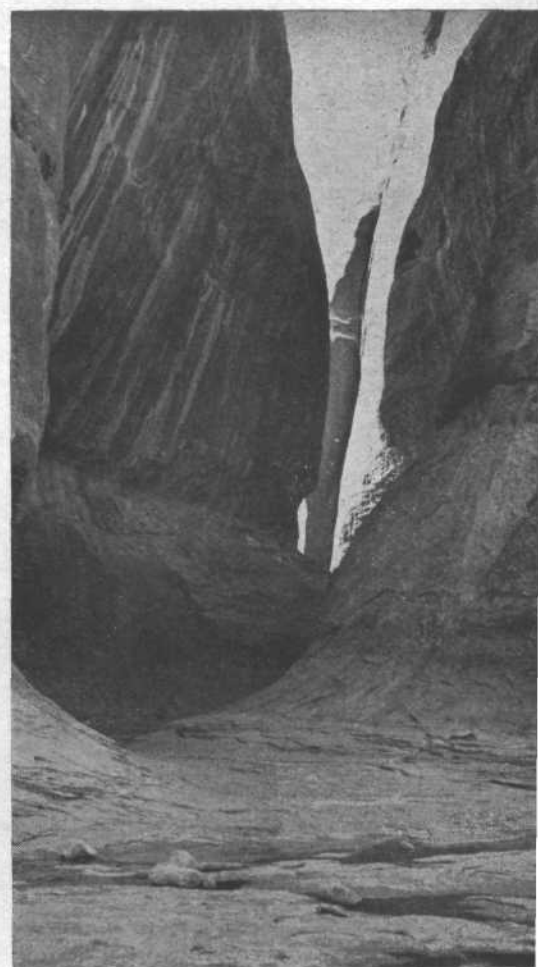
Dr. Wm. L. and Dolores Thompson, Richmond, Calif.

Paul L. Wright, Prescott, Arizona

That unscheduled stop at Mexican Hat set the stage for a romance which reached its climax in 1954 when Joan and Gay were married, while he was serving a two-year hitch in the Air Force.

In 1956 Frank Wright took the Staveleys on trips down the San Juan and through Grand Canyon as a wedding present—and Gay liked the adventure of white water boating so well he decided to make a career of it. In October '57 he bought the Mexican Hat river equipment from Wright, and during the 1958 season piloted four trips on the San Juan, three in Glen Canyon, one through Grand Canyon and several one-day trips from Bluff to Mexican Hat.

While the Staveleys have a home in Grand Junction, Colorado, the head-



Entrance to Bridge Canyon where it joins Forbidden Canyon, one of the scenic passageways on the trail from the river to Rainbow Bridge.

quarters for their river expeditions is at Mexican Hat.

At Wahweap our journey ended and the fine companions of the 9-day trip down the San Juan and Colorado departed for their homes, leaving only Skipper Gay and his boatmen to load the boats on trailers for their return trip to Mexican Hat. Gay was scheduled to leave in a few days for the greatest of all the western river adventures — the three-week boat trip through the Grand Canyon of the Colorado where Ol' Man River cascades over many rocky barriers, challenging the skill of the best white water boatmen.

Our last evening together we drove from Wahweap down to the damsite where scalers and drillers and powder men are working around the clock in the preliminary construction of the great dam that is to provide 900,000 kilowatts of much needed power for the states of the Southwest, and as a very important by-product, better accessibility to a great recreational area in the land of fantastic colors and rock formations which is southern Utah.

LETTERS

Regarding the Rattlesnake . . .

Desert:

I have lived on the Mojave Desert two years and in that time have come face to face with only three rattlers. In each case the encounter was peaceable. I was raised in Virginia and taught to kill all snakes on sight . . . but after observing that snakes try to get away from man instead of attacking him, I stopped killing and began capturing them for pets. Since then I have been the champion of reptiles and other so-called wildlife.

JAMES C. CASSELL, JR.
Yucca Valley, California

Desert:

I was on the Amargosa in the Death Valley country for four years beginning in 1904. My young son and I spent many spring days wandering over the beautiful wildflower-covered hills until we encountered too many rattlers and sidewinders. We killed 26 of them near our cabin. But, my husband's wages were all ours for keeps — no deductions, no endless government forms to fill out. It is heavenly to recall that all that worried us then were a few measly rattlesnakes! Me? I prefer the desert and rattlers!

CORA LEE FAIRCHILD
Santa Cruz, California

Desert:

We moved to the Mojave Desert early this year, built ourselves a two-bedroom cabin and settled down. First thing we did was plant some flowers and shrubs around the place. This brought in the rodents and, in turn, the snakes. So far most of the snakes have been of the harmless varieties, but we did kill one nine-button diamondback. He was 39-inches long. Evidently there still are some rattlers in this country.

JOE FORBES
Hinkley, California

Bill Bass—Arizona Institution . . .

Desert:

I want to thank you for the fine article on Bill Bass in the October issue. It was our very real pleasure to spend a night in Wickenburg at Bass' La Siesta Motel, and we were royally entertained by the proprietor with his colored slides of Arizona's great scenery.

Bass is not only a loyal citizen of Arizona, he is an institution!

MARY M. BARTLETT
Pasadena, California

Me too, please! . . .

Desert:

Referring to the "Just Between" page in the October *Desert Magazine*, please tell your editor I would like to be included in his little party of "kindred souls" when he quits this mess which we call civilization, and heads for that spring out in the desert wilderness.

I don't know how to make a G-string but I guess if the desert Indians found a way to do it, us white savages can learn also.

LEE R. YOUNG
Ft. Wayne, Indiana

The Mitten's Geology . . .

Desert:

The photograph of one of the Mittens of Monument Valley in the October *Desert* bore the caption ". . . great volcanic core . . ." which I believe is erroneous.

All the reading I have done indicates that the monuments in the Valley proper are sedimentary in origin. Their straight-sided appearance, and terracing of the talus slope and base indicate sedimentary stratified rock.

ELNA BAKKER
Los Angeles

Dear Elna Bakker: You are correct—the Mittens are of sedimentary and not volcanic rock. The editor must have been looking out the window when that caption reached the proof desk.—R.H.

Coloring Glass on the Desert . . .

Desert:

I have been doing some experimenting in the coloring of glass on the desert, and perhaps some of the results will interest your readers:

It has been said that new glass turns amber, and old glass amethyst. My experience has been that both new and old glass will gradually assume any one of four shades, depending on the chemicals used in their making. The shades are amber, blue, green or amethyst.

If the age of the glass makes any difference it is only because different chemicals were used at different periods. I am convinced that it is the chemistry of the glass—not the age—which makes the difference.

It is said that hard glass requires more time than soft glass to change color, and I believe this is true. I placed a large cut glass bowl in my glass garden in April '57, and by August '57 it had turned a deep purple, with no damage to the glass. Other glass items take two or three years to acquire a new shade.

RUTH ROWAN
Yucca Valley, California

We Head the Other Way . . .

Desert:

My reason for being an avid *Desert* reader is the exact opposite of why most people buy the magazine—I read it to find out where people are going, and then we head in the other direction.

And we are not anti-social, either. We think camping is for the favored few who know how to camp and maintain cleanliness. We don't like to camp where hundreds have littered the place before we arrive. We don't believe in camping where everything but the kitchen sink is provided—at a fee.

Then too, we have been at this business of camping for so many years our equipment is down to the minimum. Tents, camp cots, butane stoves, ice boxes and chairs are not included in our gear.

We have a small place on the Colorado Desert near Travertine Point where we spend a night or two, and then duck over the border in the early dawn to camp in Mexico where the roads are such that the privacy everyone is entitled to still is available. No one supplies our wood or water, there are no fees, and we lead the life of Riley.

After all this, may I add that I enjoy *Desert* immeasurably. There is no periodical like it — long may it live! And it will if what I read the other day is true: Los Angeles County expects a population of 14,000,000 in 12 years! Most of these people will be looking for recreation outside the teeming urban areas.

HELEN DuSHANE
Altadena, California

Desert Poems in Braille . . .

Desert:

May I have your permission to make a hand-embossed Braille booklet of poems taken from past issues of *Desert*? I am making a booklet for myself so that I may enjoy these poems after I become totally blind, and I would like to make one for the Blind Recreation Center in San Diego to express my gratitude for the Braille training I received there.

MRS. LIKE
Calexico, California

Dear Madam: We are glad to grant the permission you seek. You have undertaken a very worthwhile project and one that will be deeply appreciated by those who are able to envision this fascinating desert only through the medium of Braille.—R.H.



Photo by Leonard Richardson

JOSHUAS

By BETTY ISLER
Santa Ana, California

No fragile, graceful members, these
Non-conformist desert trees.
Belligerent, with spiny arms
Devoid of any leafy charms,
Upraised defiantly to sky
In battle pose, grotesque, awry,
They sprawl, like rough, guerrilla bands
Haphazardly across the sands.

THE OCOTILLO

By JOHN TYLER LAWRENCE
Chula Vista, California

Lonely I stand, on the desert sand,
My many arms raised in prayer,
Silently beseeching a moment's surcease,
From the scorching motionless air.

Forelorn, pathetic and ugly,
I stand more dead than alive,
Wondering why God has spared me,
Why I'm allowed to survive.

Cringing in base humility,
Suffering mad with the heat,
Sharing my lot with the vermin,
Searching for shade at my feet.

Pitting my strength 'gainst the hopeless,
Waiting alone for the day,
When summer yields at last to winter,
And this sun-devil goes on his way.

Healing my wounds with its breezes,
Quenching my thirst with its rain,
Caressing me with air cool and tender,
Dispelling all vestige of pain.

'Til I burst forth in a myriad of crimson,
Stunningly beautiful I stand,
Haughty with regal splendor,
Truly the queen of this land.

To a Horned Toad

By BERTHA GATES GODDARD
Bellflower, California

Oh little horned toad with eyes alight,
Your color like the sand on which you run
So quickly, when you frolic in the sun,
Or when you dart and snare a gnat in flight,
Or pull an angleworm with stubborn might,
I almost stepped on you. Yet I would shun
To hurt you in the least, or spoil your fun,
Shy child of desert, or a garden sprite.

A miniken descendant you may be
Of prehistoric monster, grim and bold,
A ruler of the world in eons vast.
Beneath your scales and horns, oh mystery!
Your heart is warm, your manner calm.
Behold,
You live in peace, a lie to ages past.

HIDDEN TREASURE

By FLORETTA BARNARD VANDERBILT
Claremont, California

The mountains, squat old ladies, sit
And let the world go by.
With clouds as shawls their shoulders round
They gaze into the sky.

Small worth to earth are such as these,
Observers fain would say:
No nurture here for man or beast,
Unless they live to pray.

'Tho gaunt and ugly, wrinkled, old,
They hide an unseen wealth
For those who climb and dig shall find
Both earthly gain, and health.

ASSURANCE

By GRACE BARKER WILSON
Kirtland, New Mexico

As long as there are spaces where the sky
Bends down to touch the gray horizon rim,
And clouds of gold and crimson paint the
west,
Then fade away when sunset fires grow dim;
As long as dusky curtains shroud the night,
And shafts of silver moonlight filter through,
I'll walk abroad and stretch my arms and
soul,
And know that God Himself may walk
here too.

CHRISTMAS GREETING

By GEORGIA JORDAN
San Diego, California

His golden Star comes very near
From out the Desert's crown of blue.
The night is still, and yet I hear
The angels sing "Goodwill" to you.

Sublime

By TANYA SOUTH

I walk the valley, lowly and content,
At peace with man, and on my duties
bent.
I seek no more the starry heights to
climb.
The life sublime
May be attained by all who love God
most.
It's no respector of the purse or post.

SOUTHWEST NEWS BRIEFS

Museum Started . . .

Death Valley, Calif.—Construction is slated to start this winter on the \$350,000 Death Valley Museum, Auditorium and Information Center just north of Furnace Creek Ranch on State Highway 190. Initiated by the Death Valley '49ers four years ago, the museum is a joint project of the '49ers, California State Division of Beaches and Parks, Death Valley Hotel Corporation, and the U.S. Parks Service.

Population Soars . . .

Phoenix—Arizona's resident population now totals 1,200,000—a 60 percent gain over the 1950 count. Spectacular gains were reported for Pima County (77 percent increase during the past eight years), Maricopa (74 percent), Yuma (71 percent) and Coconino (67 percent). Yavapai showed no gain; Graham's population increased less than one percent; and Mohave was up only 5.8 percent.

Missions Accessible . . .

Mountainair, N. M.—The ancient mission churches of Abo and Quarai are now accessible by paved highways. These missions were built in the early 1600s and abandoned 75 years before the California missions were founded. A program of preserving the churches from further deterioration has been underway during the past several months.

Fail to Agree . . .

Santa Fe — Representatives of the Upper Colorado River Basin states (N.M., Utah, Colorado and Wyoming) failed to agree on a course of action to take in opposing California's announced intention of legally stalling the filling of the Glen Canyon Reservoir. The early filling of the reservoir would hamper Hoover Dam's ability to meet power commitments, California contends. The Upper Basin representatives will meet again in March.

Forest Recreation . . .

Salt Lake City — Camping, picnic and other recreational uses of the nation's forests will soar in the coming years, speakers at a meeting of the Society of American Foresters declared. Here are some of the speakers' comments: By the year 2000 the nation will need eight times the picnic and camping area it now has. Since 1946 annual visitors to national forests increased from 18,500,000 to 61,000,000 last year; national park visitor totals rose from 26,000,000 in 1946 to 58,000,000 last year. The only way sufficient recreation areas can be developed is for multiple use of existing forests—recreation, watershed protection, lumbering, mining and grazing. Land for forest and park areas near large population centers must be purchased now—the need for city and regional planning is urgent. Tourist and recreation economy is becoming increasingly important, and therefore is a force to be respected as much as the other forest uses.

Town Architecture "Frozen" . . .

Scottsdale, Ariz. — A step toward "freezing" Scottsdale as the "West's Most Western Town"—with all architecture conforming to a master plan—has been made by the town's 12 architects. They have formed a committee to advise the town council on preserving a Western flavor in this area. The architects will set boundaries within which "strict Western" building will be enforced; designate a fringe area in which "semi-Western" architecture will be accepted; and define what "strict Western" and "semi-Western" architecture is.

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Wildflower Sanctuaries . . .

Lancaster, Calif. — Four county-owned areas totaling 914 acres in the east portion of Antelope Valley were dedicated as wildflower sanctuaries to preserve the native floral growth of the desert — but a fifth area, 4480 privately-owned acres in the western portion of the Valley, was ordered studied as to cost of acquisition for a similar wildflower sanctuary. The *Antelope Valley Ledger-Gazette* said the district's supervisorial representative said purchase of the 4480-acre tract was "foolish" because the county already owns land where flowers can thrive. The four smaller parcels will be maintained by the County in their native state. The cost of fencing the acreage to prevent livestock grazing is being studied.

River Diversion Date . . .

Page, Ariz.—February, 1959, is the target date for diversion of the Colorado River around the construction site of Glen Canyon Dam. Two diversion tunnels—2300 feet in length and 41 feet in diameter—are nearing completion. They will be used to divert the flow of the river during construction of the dam. Both concrete-lined tunnels will become permanent parts of the project.

Fight Encroachment . . .

Nixon, Nev. — The Pyramid Lake Paiute Indians announced a radical policy change concerning the straying into their grazing lands of cattle from neighboring ranches. In the past the Paiutes have been indifferent to the encroachment, but now they will fight. The *Nevada State Journal* said the Paiute Tribal Council is studying means of bringing electricity, better education, improved housing and sanitation to the reservation; but these projects must wait until the land question is resolved. The new Indian weapons will be fences, court orders and legislation.

Bautista Highway . . .

Borrego Springs, Calif. — Renewed interest in the long-proposed Hemet to Borrego highway via Bautista and Coyote canyons was reported by the *Hemet News*. At present the Bautista Canyon route is open to one-way travel, but the Coyote Canyon Road from a point near the Bailey and Cary ranches is passable for four-wheel-drive cars only.

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Write KENT FROST, Monticello, Utah.

Good Fishing . . .

Salton Sea, Calif.—New recreational possibilities for this inland sea were assured when surf fishermen landed corvina. Because the sea is shallow, fishermen can wade up to 100 feet from shore at some points.

Dinosaur Booklet . . .

Vernal, Utah — The National Park Service has issued a 46-page illustrated booklet, *The Dinosaur Quarry*, which gives the background of Dinosaur National Monument, and describes the creatures whose bones have been found here. Copies may be obtained at 25c each from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Small Tracts . . .

Lucerne Valley, Calif. — Persons with statutory rights in 2½-acre-parcels may soon be offered desert recreation homestead tracts in 7000 acres of land adjacent to the Old Woman Springs Road from Old Woman Springs to a point about 10 miles east. Federal and county officials were reportedly near agreement on how the lands of Johnson Valley should be disposed of. Applications for the small tracts were made two and three years ago.



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TWELVE NEW Mexico minerals \$2; six fluorescent \$1.06; five crystallized minerals \$1.06; lists. Specimens, Winston, New Mexico.

FOSSILS. 12 Different for \$2. Other prices on request. Will buy, sell or trade. Museum of Fossils, Clifford H. Earl, P. O. Box 188, Sedona, Arizona.

ROCK COLLECTORS—attention! For juniors, 30 identified rocks and minerals including gold and copper, \$1.10 postpaid; or, if advanced collector, send \$5.50 for package of fossils, minerals, crystals (singles and groups), gold, nodules, rocks. Identity and locality. Stamps you send, bring more rocks! Offer good one year. The Rockologist, Box 181, Cathedral City, Calif.

CHRISTMAS SPECIAL! Agatized whalebone vertebrae. Gem material has good cellular patterns in shades of blue, brown, and gray. Cut 3 ways. 1/2 to 10 lb. pieces, 35c lb. Fine blue 50c. Fossil specimens 20c lb. Add postage. Artrox, 2415 Thomas St., Redondo Beach, Calif.

GEMMY FLUORITE octahedrons. 3 pairs \$1. Each pair a different color. Gene Curtiss, 911 Pine St., Benton, Kentucky.

FREE LIST of crystallized minerals. Complete spectrographic assays \$5. Detection of any one element, \$1 each. Hal Miller, Rt. 1, Eldorado Springs Rd., Boulder, Colorado.

THE BEST holiday gifts are beautiful mineral specimens. Take your choice from our large stock of domestic and foreign crystal and massive specimens. Write for free price list. Continental Minerals, P.O. Box 1206, Anaconda, Mont.

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WE ARE mining every day. Mojave Desert agate, jasper and palm wood shipped mixed 100 pounds \$10.50 F.O.B. Barstow. Morton Minerals & Mining, 21423 Highway 66, R.F.D. 1, Barstow, California.

TURQUOISE FOR sale. Turquoise in the rough priced at from \$5 to \$50 a pound. Royal Blue Mines Co., Tonopah, Nevada.

CAVE CREEK jasper \$1.50 pound or 4 pounds for \$5 postpaid. Sadler, 719 E. Moreland, Phoenix, Arizona.

ALASKAN CUTTING material and slabs. Jasper, agate, petrified wood. Mixed rough, 50c per pound. Small slabs, 50c each, plus postage. Epidote crystals, garnet, pyrite, mineral specimens. Information on request. No collection complete without specimens from the fabulous 49th state. Davidson's, Box 154, South Tongass, Ketchikan, Alaska.

UTAH ROCKS. Petrified wood, dinosaur bone, beaver agate, snowflake obsidian, 50c pound. Slabs, 25c square inch. Septarian nodules, selenite, white onyx, 15c pound. Postage extra. Hubert's Rock Shop, Hurricane, Utah.

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FROM OLD Comanche hunting grounds: Indian artifacts, buffalo skulls. Mounted horns, Western lamps. Prices on request. Thunderbird Trading Post, Highway 80 at Brazos River, Millsap, Texas.

AUTHENTIC INDIAN jewelry, Navajo rugs, Chiricahua blankets, squaw boots, old Indian collection. Closed Tuesdays. Pow-Wow Indian Trading Post, 19967 Ventura Blvd., East Woodland Hills, Calif. Open Sundays.

THREE FINE prehistoric Indian war arrowheads \$1. Flint scalping knife \$1. Rare flint thunderbird \$3. All for only \$4. Catalog free. Arrowhead, Glenwood, Arkansas.

"MAGIC KACHINAS" booklet. Make Hopi Indian kachina spirit images. Carve—paint. Story, map, patterns. Well-illustrated, informative. For your copy, send \$1—Ethos Publishing Co., P.O. Box 5056, Phoenix, Arizona.

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FINE RESERVATION-MADE Navajo and Zuni jewelry. Old pawn. Hundreds of fine old baskets, moderately priced, in excellent condition. Navajo rugs, Chimayo homespun, artifacts. A collector's paradise! Open daily 10 to 5:30, closed Mondays. Buffalo Trading Post, Highway 18, Apple Valley, California.

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● MAPS

SECTIONIZED COUNTY maps — San Bernardino \$1.50; Riverside \$1; Imperial, small \$1, large \$2; San Diego 50c; Inyo, western half \$1.25, eastern half, \$1.25; Kern \$1.25; other California counties \$1.25 each. Nevada counties \$1 each. Topographic maps of all mapped western areas. Westwide Maps Co., 114 W. Third St., Los Angeles, California.

Unusual "Artifacts" . . .

Virginia City, Nev.—Into the cornerstone box sealed in the monument commemorating the 100th anniversary of the discovery of silver on the Comstock Lode, went a bottle of whisky, a deck of cards, a pair of dice, a couple of poker chips and a .36 caliber bullet. These were the contributions of Lucius Beebe, chairman of the memorial committee, who said no artifacts could be more appropriate as symbols of the Comstock's early days than hard liquor and gambling implements. Also placed in the box were legal and rare documents, old newspapers and a small bar of silver bullion.

Water Decline . . .

Phoenix—Water tables in Arizona's major ground-water basins continued to decline, the U. S. Geological Survey reported. The Salt River Valley decline ranged from one to 25 feet; the lower Santa Cruz basin water level dropped one to 30 feet. Increased irrigation developments were reported in McMullen Valley, Harquahala Plains, and parts of Mohave County. The Upper Santa Cruz basin and portions of the Yuma-Mohawk areas had local rises in ground-water levels.

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PAN GOLD: \$1 for 75 panning areas in 25 California counties. Geological formations, elevations, pertinent notes. Panning pans \$2.75, \$2.25. Leather nugget and dust poke \$1. Fred Mark, Box 801, Ojai, California.

ATTENTION GOLD diggers! For sale two 20 acre placer claims. Reasonable. Write Post-office Box 102, Quartzsite, Arizona.

● REAL ESTATE

NO DOWN payment—highway frontage on 395. 3 to 12 acre parcels, \$20 to \$30 per month. Each parcel has 330 feet of frontage and is located 16 miles North of Adelanto on main road to California City and Fremont Valley. Level with view, shallow water and Edwards Air Force Base one mile west. Also Joshua covered 20 acre parcel same locale bordering Air Base—\$28 per month, \$2800 full price. Near Randsburg, level to mountains with beautiful view toward California City, 40 acres, \$28 per month, \$2800 full price. Also 20 industrial acres on railroad, Hinkley-Lockhart area \$40 per month, \$3900 full price. No land for less in this section! Owner — Vermont 8-3176, Vermont 8-2824. 3835½ Keystone Ave., Culver City, Calif.

Bat Hordes . . .

Morenci, Ariz. — A University of Arizona zoology professor estimated there are more than 1,000,000 bats in Eagle Creek Cave southwest of here. Dr. E. Lendell Cockrum said the bats are so tightly packed against the chamber's high ceiling they look like a layer of velvet. He thinks this is the largest concentration of bats in the state. The bats, a Mexican free-tail species, are in Arizona from mid-May to mid-October. During the winter months they migrate south into Mexico.

Pueblo Fracas . . .

Santo Domingo, N. M.—A storm of angry protest broke out in normally peaceful Santo Domingo Pueblo over a 4.45-acre plot of land. In 1911 the Federal government took the land, used until last year for school purposes, and paid the Indians \$110 for it. Today the government is offering the land back to the Indians—but not on a tax-exempt basis, as the Indians demand. The tribesmen claim that minus trust status, the land could be sold to white men by some future council—thus creating an intolerable "white man's island" in the heart of the Pueblo.

GROCERY STORE, motel, service station. Highway 66. Priced at \$65,000, \$10,000 down. Will trade for income property. Submit offer. Jack M. Riddle, Cadiz, California.

DESERT INVESTMENT. \$20 down, \$15 month buys level 20 acre lot, on road. In NW¼ Sec. 6-12N-18E, in beautiful Lanfair Valley, San Bernardino County, California. Full price \$1295. Owner, Dale Henion, 2086 E. Colorado, Pasadena, Calif.

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FREE CATALOG: Western wear, boots, saddles, leather supplies. Silver Spur, Box 1785-JJ, Fort Worth, Texas.

GHOST TOWN items: Sun-colored glass, amethyst to royal purple; ghost railroads materials, tickets; limited odd items from camps of the '60s. Write your interest—Box 64-D, Smith, Nevada.

● MISCELLANEOUS

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CASH FOR hunting knives, before 1900, good condition only. Mail particulars. Lewis, 316 "C" Street, San Diego, Calif.

PINYON NUTS, \$1.25 pound, postpaid anywhere in States. Mrs. H. F. Lauzon, Box 34, Grand Canyon, Arizona.

HAND MADE violin, bow and case. \$87. Old violins repaired. George Blatt, Box 213, Johannesburg, California.

Old Bridge . . .

Blythe, Calif.—The Palo Verde Valley Chamber of Commerce has requested the state to leave the old Blythe-Ehrenberg bridge structure intact, after completion of the proposed new freeway bridge across the Colorado River, the *Palo Verde Valley Times* reported. The new bridge as now designed permits only motor vehicle traffic, but the chamber said the existing bridge handles considerable foot, horse, sheep and cattle traffic, and if left standing could continue in this capacity.

New Capitol Plans . . .

Carson City, Nev.—A controversial plan to raze the present Capitol building and replace it with a one-story structure was part of a comprehensive proposal presented to the State Planning Board by a San Francisco architectural firm. The master plan also called for erection of a legislative-state archives building adjacent to the new Capitol. A new supreme court building would be built south of the Capitol. Funds for advanced planning of a new legislative building were appropriated last year.



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MAY AND JUNE, 1959

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- Come and see the final 100 miles of Gentle Glen Canyon in 1959. **We offer the lowest boat fares** in our 21 years of guiding on Western Rivers.
- To all of you who pay your full fare before December 31, 1958, the full fare will be \$50.00. The same short-trip fares after February 1 will be \$60.00.
- For 20 years we have offered river trips on Western Rivers in U. S., Canada and Alaska—"down north" to the Arctic. Our small craft have traveled to within 1400 miles of the North Pole.
- To all of you who identify within one - half topographic mile, the camera spot of the above photo we will give a \$5 credit on any boating fare. For particulars, write or wire:

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Landmark Doomed . . .

Hesperia, Calif.—The old Hesperia Hotel, one of the Mojave Desert's most famous landmarks, is being razed by wrecking crews. The picturesque brick hostelry was condemned by county authorities.

Ute Corporations . . .

Roosevelt, Utah—The Affiliated Ute Citizens are studying proposals to establish three tribal corporations, one for the sheep industry; one for cattle; and the third to handle funds which come to the Indians from oil leases, oil lease bonuses, royalties, claims settled by the government and any other income of the group.

Charcoal Ovens . . .

Ely, Nev.—The State Park Commission will request additional funds to place a caretaker on the payroll to supervise and maintain the Ward Charcoal Ovens State Park, 17 miles south of Ely, reports the *Ely Record*. Money is already available for the digging of a well at the Ovens to provide a dependable water supply for tourists.

Glen Land Sale . . .

Kanab, Utah—The Bureau of Land Management will sell 49 small tracts of public domain to highest bidders at the Newhouse Hotel in Salt Lake City on January 7. The tracts are located 66 miles east of Kanab and 14 miles northwest of Glen Canyon Dam site. They range in size from 2.5 to 3.15 acres, and appraised values are \$175 to \$300 per tract.

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Desert Pictures Available . . .

Santa Fe, N. M.—The New Mexico State Tourist Bureau has completed production of a new 28-minute sound-color film rounding up the many attractions of the Land of Enchantment. The film is available in 16 mm. for clubs and organizations outside New Mexico if requests are received at least six weeks in advance. E. P. Haddon, noted outdoor photographer, shot the film which is titled "The Land of Enchantment."

Western Village . . .

Apple Valley, Calif.—Erection of a Western Village, patterned after a "Gay '90s Ghost Town," is progressing at Dead Man's Point near here, reports the *Apple Valley News*. All structures and merchandise in the new tourist attraction will conform to Gay '90s standards of appearance.

Study Thunderstorms . . .

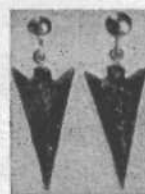
Socorro, N. M.—A research team working under Navy contract studied the phenomenon of thunderstorms atop 10,297-foot Mt. Withington. The *Socorro County El Defensor* said the researchers used an airplane, captive balloons and radar in their summer project. The team sought new information on how clouds make their electricity, how thunderstorms originate, and the movement of air in, above and below clouds.

Indian Lands . . .

Parker, Ariz. — A group of Utah businessmen and engineers have submitted a new proposal to develop 60,000 acres of land on the Colorado Indian Reservation. An earlier plan collapsed when Colorado River Enterprises was unable to post a \$5,000,000 performance bond. The Utah group would develop the land, turn one-third of it over to the Indians and retain the remaining two-thirds for 25 years, after which the Indians would receive clear title to all the land.

Seeks Re-Election . . .

Window Rock, Ariz.—Navajo Tribal Council Chairman Paul Jones said he will seek re-election to a second four-year term in the March 2-3 Tribal election. Sam Ahkeah, tribal chairman for 10 years before being defeated by Jones, is reportedly planning to oppose the 63-year-old head of the Navajos.



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Box 564-DM, Kennewick, Wash.



Vernal, Utah . . .

A spokesman of the National Farmers Union Exploration Corporation of Denver said his company was studying bids for drilling and coring on oil shale properties in the Bonanza-Dragon area, the *Vernal Express* disclosed. The tests are intended to determine the amount of overburden several miles back from the outcrop, and the continuity and thickness of the beds. Ten to 15 methods for recovering oil from shale currently are being tested throughout the world, and the Denver corporation hopes to avail itself of the most economically feasible one — if and when it begins its Utah operation.

Grants, New Mexico . . .

Increased production of uranium mines and mills in the Grants area was reflected in a steady rise in deliveries of uranium concentrates to the AEC depot in Grand Junction, Colorado. John A. Garcia, New Mexico State Mining Inspector, said it would probably be two more years before the uranium industry reaches peak production in his state. New Mexico uranium output was valued at \$30,510,000 during the year—an increase of \$2,135,000 over the preceding year. Tonnage increased greatly, but the ore was of lower grade than last year.

Tuscarora, Nevada . . .

New gold mining activity is reported in Tuscarora, Elko County, one of Nevada's most famous mining towns. King and Company has begun development work on the White Palace Claims, formerly the Gold Bug property. The mining concern hopes to erect a mill near the mine to treat free gold.

Santa Fe . . .

Perlite, virtually unknown commercially before the war, is now being mined in three New Mexico counties, Taos, Socorro and Valencia. Production of perlite in Taos County—where three mills will turn out more than half of the U.S. demand—is of particular economic importance because of the long-standing depressed economy of the northern part of the state, the *Santa Fe New Mexican* said. Perlite resources in the area of the Taos County operations apparently are practically unlimited. One company said the ore content of only five percent of its holdings has been proven by drilling—but even this small test will provide all the crude material the plant will need for 20 years of operation. Perlite, although abundant in the West, is practically non-existent east of the Rockies. Most of the nation's production goes to the construction industry, but many specialized uses are being found for this material.

Tonopah, Nevada . . .

Work was expected to begin on construction of a mill for recovery of selenium and silver from Tonopah area ores, the Nevada Minerals and Oil Corporation announced. Plans call for the immediate reactivation of the underground workings of the Tonopah-Belmont claims, as well as the milling of dump material on the surface. Also involved are the North Star and Montana mining claims. Outright acquisition of 22 claims in the Seibert Lake deposits, five claims in the Crow Springs district, and a 35-year lease on 1200 acres in the Crow Springs area were added to the corporation's assets in preliminary moves.

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"Popular Prospecting" by H. C. Dake.....	2.00
"Uranium, Where It Is and How to Find It" by Proctor and Hyatt.....	2.50
"Minerals for Atomic Energy" by Nininger.....	7.50
"Let's Go Prospecting" by Edward Arthur.....	3.50

MAPS

Map and Geology (Uranium and Mineral Districts of California).....	1.50
Map of Kern County (New Section and Township).....	1.50
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Denver, Colorado . . .

The Free World's uranium reserves for the foreseeable nuclear power program are sufficient, AEC Raw Materials Division Director Jesse C. Johnson said. These reserves amount to 1.5 million tons of uranium oxide in areas under development, with an ultimate possible production of 2 million tons. Atomic Energy programs, still in the planning stage, would broaden future market demands for uranium, Johnson predicted.

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Ballarat, California . . .

Onyx deposits nine miles west of the ghost town of Ballarat will be exploited by a Southern California partnership. They estimate that 70,000 tons or more of the material is available, plus 50,000 tons of travertine marble. Principal uses of the onyx will be for jewelry, table tops, and interior and exterior building embellishments, while the marble will be used in construction work.

Washington, D. C. . . .

Only four materials will be purchased for the national stockpile during the 1959 fiscal year — asbestos, small diamond dies, muscovite block mica and firm mica. The Office of Civil and Defense Mobilization said other commodities could be included later. The reduction in the number of desired materials resulted from the filling of many of the stockpile goals during the past year, and the change in expectancy of the duration of a future all-out emergency from a five year to a three year period, officials added.



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Window Rock, Arizona . . .

Oil production on the Navajo Reservation was temporarily suspended following complaints by the Tribal Council that the petroleum producers are wasting natural gas from the oil wells. A Tribal spokesman estimated that 80,000,000 feet of gas worth \$2,500 to the tribe in royalties was wasted daily. The Federal Power Commission has granted temporary authority to the El Paso Gas Company for construction of plant and pipeline facilities necessary to collect and transport gas produced in the field.

Santa Fe . . .

The New Mexico State Land Office received \$3,500,000 for oil leases on less than 77,000 acres of state land during the first eight months of 1958—a record high average of \$46 per acre per year. The per-acre price is 20 percent above last year's average, and over 200 percent greater than the going price 10 years ago. The state is offering about 10,000 acres of presumably potential oil land each month.

Austin, Nevada . . .

The Atomic Energy Commission and Apex Minerals Corporation reached agreement on the price the former will pay for uranium concentrates produced by the latter, thus clearing the way for construction of an \$800,000 uranium mill by Apex near Austin. The company said its 200-ton-a-day mill would be available to other Nevada uranium producers. Completion date was set for early spring.

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TRUE OR FALSE ANSWERS

Questions are on page 7

- 1—True.
- 2—False. Ocotillo belongs to the genus *Fouquiera*.
- 3—False. The Lost Dutchman is still a lost mine.
- 4—True. 5—True.
- 6—False. The University of New Mexico is in Albuquerque.
- 7—True, approximately 280 feet below sea level at Badwater.
- 8—False. Salt River Valley is irrigated from Salt River water stored behind Roosevelt dam.
- 9—True. 10—True.
- 11—False. Salton sea water is too salty for domestic use.
- 12—True. 13—True.
- 14—False. Geronimo was an Apache.
- 15—True.
- 16—False. Organ Pipe derives its name from a species of cactus.
- 17—True. 18—True.
- 19—False. Drifting sand may carry a little gold, but no rich strikes have been made in it.
- 20—False. Highway 80 crosses the Colorado River at Yuma.

GEMS AND MINERALS

REPORTS FROM THE FIELD

These notes are intended as suggestions for your collecting trips. Always make local inquiry before following trails into uninhabited areas. Mail your recent information on collecting areas (new fields, status changes, roads, etc.) that you want to share with other hobbyists, to "Field Reports," Desert Magazine, Palm Desert, California.

Chalcedony in the Kofas . . .

Yuma, Ariz.—Will T. Scott of La Mesa, California, gives these directions to a large field of chalcedony in very large pieces, and colors ranging from pink and blue to cream: "At the south end of Kofa Mountain massif, there is a gap between the Kofas and the Castle Domes that appears to be passable (it isn't). Just before reaching this pass, and right on the boundary of the Game Refuge, you enter the chalcedony field. And just east of a sign denoting the Game Refuge is a seam of pretty good fire agate. About a half mile east of here are some quartz crystal rosettes and geodes. The latter are of inferior quality."

The Rains Helped . . .

Boron, Calif.—Unusually heavy rains on the Mojave Desert have worked to the rockhounds' advantage at the Boron petrified wood locales (*Desert March '58*). Specimens were exposed on the ground by the rains, and no digging was necessary, Kern County Mineral Society members disclosed.

Rockhounds Angered . . .

Prineville, Oregon—A legal mining claim in the heart of the famous White Fir Agate Lode, for years one of the most popular public collecting grounds in the Pacific Northwest, caused angry reaction among the rockhound fraternity. Local hobbyists and members of the Chamber of Commerce measured and laid out stakes for mining location claims to virtually surround the 20-acre commercial claim. All claims filed by the local rockhounds carry the statement: "This claim is filed for the people of the U.S., and is to be kept open for public use."

Travertine Under Claim . . .

Calico, Calif. — Travertine (or "silver onyx," as it is known locally) deposits in the Calico area are under claim, the Long Beach club reports. The claim owners are allowing visitors to collect material — as much as a person can carry—for a \$2.50 fee. The specimens have been freed from the seam by bulldozer.

Barite Crystals . . .

Portuguese Bend, Calif.—Excellent crystal groups of barite are being collected on the crumbly cliffs near Marineland, according to the field trip chairman of the Mineralogical Society of Southern California. The climb to the barite seams is strenuous and, in places, quite precarious.

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Arizona Quartz Crystals . . .

Congress Junction, Ariz.—Here are directions to an interesting quartz crystal location, as reported by the Tucson Society: Travel west two miles from Congress to the junction of Highway 93; turn north on 93 and keep a sharp lookout to your right for a sign reading "Gypsy Ranch"; follow the ranch road in a short distance—perhaps two miles—to where a series of test holes have been dug close by the road. In this area quartz crystals of odd and unusual form occur. Most are opaque, but many are doubly terminated, some recapped with iron coatings or showing inclusions, penetrations, etc. Limonite cubes also are found here.

Excellent Obsidian Locales . . .

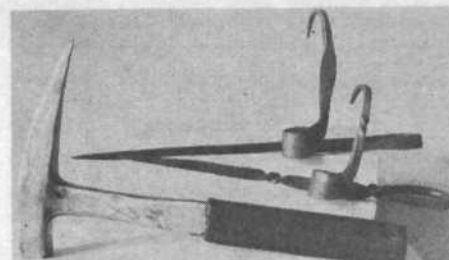
Alturas, Calif.—Large gravel pits north of Alturas are yielding abundant red and black streaked and spotted obsidian nodules. These are good-sized specimens, reports Will T. Scott of La Mesa. A mile east of the town of Davis Creek, between Alturas and Lakeview, Oregon, in the cemetery vicinity, "baseball-sized" obsidian is being collected. This material is red, brown and black; streaked and spotted, with some iris. A very rugged Jeep trail over a hill east of the cemetery leads to another good obsidian field.

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Carey Ranch Is Open . . .

Bend, Oregon—The Clara Carey Plume Beds off of State Route 27 near Crooked Creek Junction are open for collecting, despite widely-circulated reports to the contrary. This is the information supplied by Henry and Vanda Dierck of the Tacoma, Washington, Agate Club. The Diercks said Dave McGuffin, one of the Carey Ranch owners, was most obliging on their recent visit. Both upper and lower gem locations have been bulldozed for easier collecting.

Palos Verdes Estates, Calif.—A group of Palmdale hobbyists made a field trip to Palos Verdes Estates where, they report, cutting material among the beach pebbles was very limited.

Gabbs, Nev.—The famous Gabbs petrified wood locale is now under the protection of the Nevada State Park system. Collecting specimens at this location is no longer allowed.

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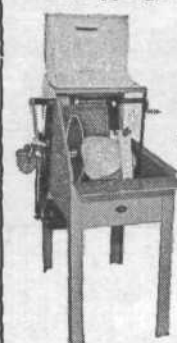


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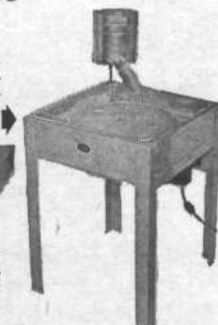


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High Sierra Minerals . . .

Madera, Calif. — The rich potential of gem stones and minerals in the High Sierras of eastern Madera County was described by Ralph Walton, a packer. Erosion and glaciation, following the upheaval which formed the Sierras, has left formations exposed in the Minaret District. Much prospecting has taken place in this area, but its ruggedness and inaccessibility have prevented commercial mining. Iron, copper, lead, silver, zinc, tungsten, molybdenum and titanium have been found here. Epidote probably is the most common mineral of interest to hobbyists, Walton said. Also abundant are garnet, pyrophyllite (occurring in the rocky ridge just above Stevenson Meadow on the upper North Fork of the San Joaquin River), and andalusite crystals (below the pyrophyllite formation). Lazulite and actinolite are plentiful, but in localized areas. Tremolite is scarce, but quartz is abundant and varies from clear to whitish. Pyrite, galena, chalcophyrite and sphalerite are among the many other minerals found in this district. Stevenson Meadow is about a 14-mile pack trip. Walton's address is Gen. Del., O'Neals, in the winter months; Box 118, Bass Lake, in the summer.

Santa Barbara, Calif.—Fossil bone specimens described as excellent were collected this summer along Refugio Beach. Best time to find the material is at low tide.

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GEM FIELD MAPS OF FOUR-CORNER STATES

Cy Johnson, the Western travel author and publisher, has gathered together 32 full-page maps of gem and mineral collecting areas in a little paper-back book entitled *Gem Hunters Atlas—Southwest*.

The maps are professionally done and show great detail—not only indicating collecting fields, but camping and picnic sites, trails, mines, general points of interest, condition of roads, etc. Each map takes in a great deal of territory, often embracing dozens of collecting fields. The collecting fields are in four states: Arizona, New Mexico, Colorado and Utah.

Published by Scenic Guides. \$1. May be purchased by mail from Desert Magazine Book Shop, Palm Desert, Calif. California residents please add 4 percent sales tax.

MANY VARIATIONS OF CRYSTAL INCLUSIONS

Any foreign matter inside of a crystal is called an inclusion. They are infinite in nature and arrangement.

Gaseous inclusions appear as cavities or negative crystals within a crystal. Liquid inclusions are often water, sometimes dissolved salts or liquid carbon dioxide. Solid inclusions appear in great varieties, and many are microscopic. They include other minerals, sand, dust or organic matter. Organic inclusions are best known by the insect inclusions in amber (which is not a crystal), but also include bits of wood or coal trapped by growth of the host crystal.

The unusual round bubble inclusions are peculiar to glass, and often are formed in obsidian. But the round bubble in any crystalline mineral is so rare that specimens which contain them are immediately identified as synthetic.—George E. Smith in the Oklahoma Mineral and Gem Society's *Sooner Rockologist*

Rosarita Beach, Baja Calif.—San Diego rockhounds found some good material in this area: red moss agate, clear agate, and dendrites. The specimens were small, they reported.

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FROM THE GEM AND MINERAL WORLD

"Archeologists have found ivory figurines from ancient Babylonia that have survived for 2700 years. One thing this proves is that Babylonian children were not allowed to play in the living room."—*Pseudomorph*

"A rockhound is a man who slaps his little boy's hand for picking up candy that has been dropped in the dirt—and then licks a slab of agate to see if it will polish."—*Breccia*

"If all the cars in California were lined up bumper to bumper—some dope would pull out and try to pass them."—*Rockcrafters' Psephite*

"There is nothing harder than a diamond except paying for it."—*Gemcrafter*

"If you can't see God in a pebble, you can't see him in a mountain." — Austin, Minnesota, Gem and Mineral Society's *Achates*

"A man reaches metallic age when he has a heart of gold, silver hair, and lead in his feet."—*Sooner Rockologist*

"I've never heard a tumbler make as much noise as a grumbler."—Miami, Florida, Mineral and Gem Society's *Chips and Facets*

LAPIDARY SKILL ENHANCES MINERALOGY HOBBY

Those interested in both mineralogy and lapidary can benefit by putting one to work for the other. For instance, an Iceland Spar specimen looks much nicer when polished and the double refraction made visible. A little lapidary work can remove foreign matter blocking full view of crystal inclusions in quartz. When cut properly, botryoidal psilomelane not only will present a different cabochon, but the structure of the mineral readily can be studied.

Polishing slabs of material that have rare minerals as inclusions can be of use in distinguishing these rarities. Basalt that contains zeolites can be cut and then studied. Beach nodules also can be cut and polished, many of them affording unique studies in geology.

Many unsuspected minerals can be cut into attractive gems: bornite, chalcophyrite, hematite, psilomelane, etc.—Jack Schwartz in the Montebello, California, Mineral and Lapidary Society's *The Braggin' Rock*

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By Dr. H. C. DAKE, Editor of The Mineralogist

Fairburn Jaspagate

In response to some recent inquiries, attention may be called to the fact that the well known and most colorful Fairburn "agate," is not a true agate. Technically this material is a jaspagate. In slabs, this material is sub-translucent, while true jasper would be wholly opaque, and agate and chalcedony are transparent to translucent.

The well known polka dot "agate" of Central Oregon is in this same class, not a true agate, and yet not a true jasper. In these cases material is often referred to as agate or as jaspagate, a mixture of jasper and agate. Materials in this class are almost identical chemically, differing only in physical properties, color, markings, and the like.

By whatever name we may call this Fairburn material, it is most beautiful, especially the lively red colored and well-banded examples.

"Marchet Bands"

The so-called "Marchet Bands," noted in some obsidian, are no mystery, nor are they caused by inclusions of mercury or carbon. These colorful straight, curved, or fantastically folded ribbons, are simply part of the flow structure of this material. Depending upon the angle at which the material is sectioned, the lines and bandings of the flow structure will appear different. It has been suggested that earthquakes were involved in the genesis of this material; an ingenious thought, but wholly without foundation whatever. The igneous rocks already offer plenty of complications for the amateur, without adding more.

The above data was given to me, many years ago, by Dr. Esper Larsen, then a celebrated petrographer at Harvard University. Dr. Larsen made a petrographic examination of the Glass Buttes obsidian, more than 20 years ago, after I first described and called attention to this now celebrated locality in Central Oregon. Dr. Larsen also examined specimens of the rare "double" and "triple" flow specimens, which are contacts between flows, often meeting at right angles.

Obsidian, in composition, is a rhyolite rock, and is classed as such by the petrographer—the rock expert. All rhyolite rocks have a high silica content, averaging close to 75 percent. Included in the rhyolite group are such common rock as pumice, which may be regarded as the froth or foam floating on the original lava. The familiar perlite of Central Oregon, the home of the agate-filled thunderegg, is just another physical form of rhyolite.

Rhyolite is the eruptive equivalent of granite, both having the same essential chemical composition. The only differences are structural and genetic. Neither of these rocks carry even minute traces of mercury or carbon, and the iron content is low, usually around one percent. Chemically, the rhyolites are composed largely of silica and aluminum oxides.

The Marchet Bands, being simply a flow structure, were obviously present the instant the obsidian chilled to a point where it became a solid. The "offsets" in the bandings appeared in the mass during slight movements in the final stages of solidification, without benefit of earthquakes, fracturing or any secondary recementation by mineral laden percolating waters.

Tumbler Speeds

Gem tumbler speed usually is given in RPM. This may be confusing and not accurate, since tumblers vary greatly in diameter, hence the RPM speed for a small barrel would be wholly incorrect for a large one.

Ken Borschel of Iowa Falls, Iowa, suggests that the speed of tumblers be stated in surface feet per minute as measured on the container surface. This method of stating correct speeds has long been used in reference to grinding wheels.

Without doubt this inaccuracy in tumbling speeds accounts for a good deal of the trouble encountered by beginners. The operator of a small barrel may be trying to get proper results by following the RPM speeds used by the operator of a much larger container.

Synthetic Gems

The most widely used crystalline types of artificial gem stones are the fused aluminum oxide and magnesium aluminum oxide varieties. Fused aluminum oxide (Al₂O₃—artificial sapphire), has been manufactured for some years, while the spinel type (MGO-Al₂O₃) is of more recent origin.

By the addition of small amounts of chromium, nickel, cobalt, manganese and similar metallic oxides, a wide variation of colors can be attained in artificial corundum. The hardness, specific gravity, color and refraction index of both artificial materials closely resembles the natural material, often making determination difficult without the aid of proper equipment.

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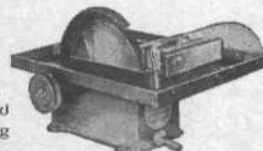
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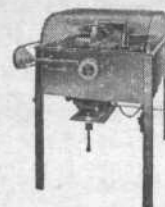
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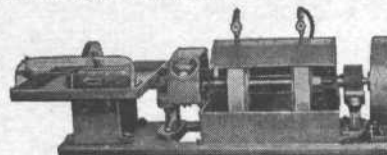
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BOOKS of the SOUTHWEST

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THE ARMY'S ROLE IN THE SETTLEMENT OF THE WEST

The popular conception of two-gun sheriffs and determined vigilantes as being the sole forces of law and order in the West is amended by Aurora Hunt in her latest book, *James Henry Carleton, Western Frontier Dragoon*.

By tracing General Carleton's career, author Hunt sheds additional light on the U. S. Army's problems and accomplishments of a century ago. "The constructive efforts of the United States soldiers have frequently been minimized," writes the author. In addition to helping tame the lawless ele-

ment in the West, they "surveyed and built roads for others to travel; they explored and exploited yet not often for their own profit. The construction of forts served not only for protection but as experimental farms where seeds were planted, fruit trees and vegetables propagated. Their saw mills were replaced by flour mills and sites of forts became cities . . ." And only through the protection offered by the soldiers were the geologists, ornithologists, archeologists, meteorologists and other scientists able to function on the frontier.

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By RANDALL HENDERSON

ONE OF MY correspondents is Mrs. Ruth Rowan of Yucca Valley, California. Mrs. Rowan makes a delightful game of living on the desert. In her back yard she is experimenting with the coloring of glass under the desert sun and some of the things she has learned are quoted on the Letters page of this issue.

Another of her interests is the propagation of the Joshua tree. The Joshua is an eccentric, in habits as well as in appearance. Joshuas do not bloom every year and Mrs. Rowan is keeping records to determine if there is a definite cycle-pattern, or if it is a hit and miss affair, the secret of which is known only to the Creator.

To Ruth Rowan the desert is a great fascinating laboratory in which the works of the God of creation are far more revealing than any book ever written. I do not know Ruth Rowan personally, but I'll bet she is a darned good neighbor.

* * *

Two years ago California initiated a plan for the construction of parking places along its highways — little ramada-shaded turnouts with tables for picnickers and trash cans for litter. Many other states have installed these roadside rests and they have been very popular with motorists.

On a more or less experimental basis, the first two rests were installed along the desert span of U.S. Highway 66 between Barstow and Needles.

But the program is under fire. Critics say they are too costly to build, and the expense of maintenance exorbitant. The program seems to have become stymied before it is well started.

The job of building and maintaining the rest parks was given to the Division of Beaches and Parks. And therein lies the trouble. Much of the excessive cost has been due to the expense of complying with specifications set up by the State Highway department for paving and curbing the turnouts, and the fact that the Park department is not normally equipped with trucks and personnel for the maintenance job.

The Highway department, on the other hand, has mobile equipment on the road all the time for roadside maintenance, and could service the roadside parks at a fraction of the cost to the Park department.

Anyone who has traveled the highways of Texas will appreciate the value of these little roadside parking places. It is to be hoped the new governor of California will find a way to settle the feud between the two departments of his state—for those little shaded resting places at intervals on the long stretches of desert highway in California will add much to both the safety and pleasure of motor touring in this state.

* * *

One of the most delightful motor trips in Southern California is over the winding Pines-to-Palms highway between Mountain Center at an elevation of nearly 5000 feet and Palm Desert near sea level. Much of this journey on State Highway 74 is through the Upper Sonoran life zone—the zone of ocotillo, the yuccas, manzanita, pinyon, juniper, nolina, agave, jojoba and wild apricot—a luxuriant desert garden of fantastic foliage and creamy white blossoms in a setting of huge boulders and ramparts of granite.

But alas, the paint daubers recently have moved into this lovely natural park. Last week when I drove down the mountain grade to my desert home I found three great roadside boulders splattered with crude lettering in red paint, obviously the work of nitwits to whom nothing is sacred. The frustrating thing about this hideous form of vandalism is that it is seldom possible to identify the perpetrators.

But this is not always true. Occasionally these ugly daubings are put there by small time merchants and tradesmen to advertise their wares. You and I can do something about that. We can refuse to patronize their shops and roadside stands—and make it known to them why they are on our blacklist. In most of the states it is illegal to mar the natural landscape in this manner, but when law enforcement fails it remains for those of us who would preserve the beauty of the roadside landscape to discourage the practice in every way we can.

* * *

There will always be elections in America we hope—and there will always be winners and losers. Perhaps on the day after the November election there were hearts heavy with disappointment. I wish the defeated candidates and those who shared their aspirations for high political honor might have stood with me on the floor of my desert cove at the base of the Santa Rosa Mountains as the sun came up on the morning of November 5.

Those rugged mountains have been there for a million years. The snow on their summits has been giving life to the things that live and grow in the canyons below for countless ages. The sun coming over the mountains in a halo of crimson and azure was giving warmth and energy to living things on this earth eons before man emerged.

Those are the important things of our life—the soil, the rain, the sun. And no senator or congressman or governor can add to or detract from them. We humans play a very minor role in the Great Plan of the universe. It is good to have faith and work industriously for the things we believe to be right. But there is always the possibility we may be wrong. And after all, it is the integrity and beauty and understanding in the heart of each individual—and not the men in congress—that determine the fullness of each life.

BOOKS

(Continued from page 41)

west. He performed escort duty on the Santa Fe Trail, served in the Mexican War, and was active in the settlement of the Indian Problem. As commander of the California Volunteers at the outbreak of the Civil War, he invaded Southern-sympathizing Arizona and became its military governor. Not only was that territory made secure for the Union; "... civilization marched into Arizona with the California Volunteers ... the permanent settlement by Americans became assured," wrote an earlier historian of that event.

Published by The Arthur H. Clark Company as Volume II in its Frontier Military Series; illustrated; five maps (one folding); bibliography; index; 390 pages; \$10.

UTAH EXPEDITION WAS TRAGEDY OF ERRORS

In 1857, President James Buchanan, determined to force the Mormons to conform to a federal law which forbade plural marriages, named a new governor to replace Brigham Young, and ordered 2500 troops to accompany the new executive to Salt Lake City as an escort.

Then ensued a series of tragic blunders and misunderstandings, both in Washington and among the Latter Day Saints, which for several months threatened to result in open warfare between the army and the Utah settlers.

A completely documented record of this near-tragic episode in United States history has been compiled by LeRoy R. Hafen, professor of History at Brigham Young University, with the assistance of Ann W. Hafen. The book, titled *The Utah Expedition 1857-58*, has been published in substantial and pleasing format by The Arthur H. Clark Company of Los Angeles.

This is a factual book, devoted for the most part to letters and other documents which serve to emphasize both the ineptness of official Washington and the unnecessary suspicion aroused among the settlers in Utah. The author has let the records speak for themselves, without any attempt to justify or condemn the mistakes made by either side of the controversy.

The role played by Brigham Young at this critical period in American history adds to his stature as one of the greatest American leaders of all time.

Published by The Arthur Clark Company as Volume VIII in the Far

West and the Rockies Historical Series. Illustrated, references and index; 350 pages. \$9.50.

SMALL TOWN FEUD WHICH COMPOUNDED INTO VIOLENCE

The terrifying consequences of a complete breakdown in law and order are well known in the West; but the reasons building up to these breakdowns are too often obscured by passion or misinterpreted through prejudice.

The early Lincoln County, New Mexico, disorder — terminated with the slaying of Billy the Kid—is one of the blackest chapters in Western history. The background to these incidents is the subject of a new book, *Violence in Lincoln County, 1869-1881*, by William A. Keleher. This is a highly documented work, for the author, a noted Albuquerque attorney, knows his way around the courthouse archives which hitherto have concealed many of the facts behind the story.

Highlight of the book is the dealings between the notorious Kid and Territorial Governor Lew Wallace, a literary figure of international repute who completed his novel, *Ben Hur*, while in office. However, it is the rough letters of Billy the Kid which steal the show in this exchange. They are remarkable for the insight revealed into his character. A new facet is added

to this legend-shrouded personality: the Kid was a rather intelligent young man.

Keleher's book contains extensive notes and personality profiles. It is a dispassionate account of the classic small town feud which became compounded, but to have written it any other way would have added more fuel of half-truths to the still smouldering legend of Billy the Kid and his buckskin colleagues.

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"Little sister . . . Big sister" *The Navajo Indians surround their children with warm family affection, reports photographer Josef Muench. The two children in this picture, living close to Nature and dependent upon their own efforts for a livelihood, are part of this tribal group, touching in their love for each other.*